```
> restart:
> with(DirectSearch);
```

[*BoundedObjective, CompromiseProgramming, DataFit, ExponentialWeightedSum, GlobalOptima, GlobalSearch, Minimax, ModifiedTchebycheff, Search, SolveEquations, WeightedProduct, WeightedSum*] **(1)**

```
> tarfun:=(w[1]*(phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+
  tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu
  [p]+tau[p7])*phi[7]*(mu[p]+tau[p8])*(1-phi[8])+phi[1]*mu[p]*phi
  [2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])
  *phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(mu[p]+tau
  [p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[1]*(mu[p]+eta[p2])*
  phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi
  [4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]
  *(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*(1-phi[8]
  )+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*
  (mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu
  [p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]
  +tau[p8]+eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))*(w[1]*phi[1]
  *mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu
  [p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]
  *(mu[p]+tau[p8])*phi[8]*(mu[p]+tau[p9])+(1-w[1])*phi[1]*(mu[p]+
  eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta
  [p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta
  [p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta
  [p2])*phi[8]*(mu[p]+tau[p9]+eta[p2]))^3*(w[1]*(1-phi[8]+phi[8]*(1
  -mu[p]-tau[p9]))+(1-w[1])*(1-phi[8]+phi[8]*(1-mu[p]-tau[p9]-eta
  [p2])))^17*(w[1]*phi[8]*(mu[p]+tau[p9])+(1-w[1])*phi[8]*(mu[p]+
  tau[p9]+eta[p2]))^12*(w[1]*(1-phi[7]+phi[7]*(1-mu[p]-tau[p8])*(1-
  phi[8])+phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w
  [1])*(1-phi[7]+phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[7]
  *(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^21*
  (w[1]*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(mu[p]+tau[p9])+(1-w[1])*
  phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(mu[p]+tau[p9]+eta[p2]))*
  (w[1]*(phi[7]*(mu[p]+tau[p8])*(1-phi[8])+phi[7]*(mu[p]+tau[p8])*
  phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[7]*(mu[p]+tau[p8]+eta[p2]
  )*(1-phi[8])+phi[7]*(mu[p]+tau[p8]+eta[p2])*phi[8]*(1-mu[p]-tau
  [p9]-eta[p2])))^4*(w[1]*phi[7]*(mu[p]+tau[p8])*phi[8]*(mu[p]+tau
  [p9])+(1-w[1])*phi[7]*(mu[p]+tau[p8]+eta[p2])*phi[8]*(mu[p]+tau
  [p9]+eta[p2]))^16*(w[1]*(phi[1]*mu[p]*(1-phi[2])+phi[1]*mu[p]*phi
  [2]*(1-mu[p]-tau[p3])*(1-phi[3])+phi[1]*mu[p]*phi[2]*(1-mu[p]-tau
  [p3])*phi[3]*(1-mu[p]-tau[p4])*(1-phi[4])+phi[1]*mu[p]*phi[2]*(1-
  mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*
  (1-phi[5])+phi[1]*mu[p]*phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-
  tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*(1-phi
  [6])+phi[1]*mu[p]*phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau
  [p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1
  -mu[p]-tau[p7])*(1-phi[7])+phi[1]*mu[p]*phi[2]*(1-mu[p]-tau[p3])*
  phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]
  -tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-
  phi[8])+phi[1]*mu[p]*phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau
  [p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1
  -mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9])
  )+(1-w[1])*(phi[1]*(mu[p]+eta[p2])*(1-phi[2])+phi[1]*(mu[p]+eta
  [p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*(1-phi[3])+phi[1]*(mu[p]+
```

```
eta[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]
-eta[p2])*(1-phi[4])+phi[1]*(mu[p]+eta[p2])*phi[2]*(1-mu[p]-tau
[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-
tau[p5]-eta[p2])*(1-phi[5])+phi[1]*(mu[p]+eta[p2])*phi[2]*(1-mu
[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-
mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*(1-phi[6]
)+phi[1]*(mu[p]+eta[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi[3]*
(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]
*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-
phi[7])+phi[1]*(mu[p]+eta[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*
phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])
*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2]
)*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[1]*(mu[p]+eta
[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-
eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]
-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau
[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^13*(w[1]*(1-phi
[6]+phi[6]*(1-mu[p]-tau[p7])*(1-phi[7])+phi[6]*(1-mu[p]-tau[p7])*
phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[6]*(1-mu[p]-tau[p7])*phi
[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(1-phi
[6]+phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi[6]*(1-mu[p]-
tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi
[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*
phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^7*(w[1]*(phi[6]*(1-mu[p]-tau
[p7])*phi[7]*(mu[p]+tau[p8])*(1-phi[8])+phi[6]*(1-mu[p]-tau[p7])*
phi[7]*(mu[p]+tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[6]
*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*(1-phi
[8])+phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(mu[p]+tau[p8]+eta
[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))*(w[1]*phi[6]*(1-mu[p]-
tau[p7])*phi[7]*(mu[p]+tau[p8])*phi[8]*(mu[p]+tau[p9])+(1-w[1])*
phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*
phi[8]*(mu[p]+tau[p9]+eta[p2]))*(w[1]*(phi[6]*(mu[p]+tau[p7])*phi
[7]*(mu[p]+tau[p8])*(1-phi[8])+phi[6]*(mu[p]+tau[p7])*phi[7]*(mu
[p]+tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[6]*(mu[p]+
tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*(1-phi[8])+phi[6]
*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*phi[8]*(1
-mu[p]-tau[p9]-eta[p2])))*(w[1]*(1-phi[5]+phi[5]*(1-mu[p]-tau[p6]
)*(1-phi[6])+phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*(1
-phi[7])+phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]
*(1-mu[p]-tau[p8])*(1-phi[8])+phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-
mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))
+(1-w[1])*(1-phi[5]+phi[5]*(1-mu[p]-tau[p6]-eta[p2])*(1-phi[6])+
phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])
*(1-phi[7])+phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau
[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[5]*
(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]
*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^3*
(w[1]*(phi[1]*mu[p]*phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau
[p4])*phi[4]*(mu[p]+tau[p5])*(1-phi[5])+phi[1]*mu[p]*phi[2]*(1-mu
[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*phi
[5]*(1-mu[p]-tau[p6])*(1-phi[6])+phi[1]*mu[p]*phi[2]*(1-mu[p]-tau
[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-
mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*(1-phi[7])+phi[1]*mu[p]*
phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+
tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]
*(1-mu[p]-tau[p8])*(1-phi[8])+phi[1]*mu[p]*phi[2]*(1-mu[p]-tau
[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-
```

```
mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*
phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[1]*(mu[p]+eta[p2])*phi[2]
*(1-mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi
[4]*(mu[p]+tau[p5]+eta[p2])*(1-phi[5])+phi[1]*(mu[p]+eta[p2])*phi
[2]*(1-mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*
phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*
(1-phi[6])+phi[1]*(mu[p]+eta[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2]
)*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])
*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2]
)*(1-phi[7])+phi[1]*(mu[p]+eta[p2])*phi[2]*(1-mu[p]-tau[p3]-eta
[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta
[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-
eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[1]*(mu
[p]+eta[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau
[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau
[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-
tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))*(w[1]*phi[5]*
(1-mu[p]-tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(mu[p]+tau[p8])*
phi[8]*(mu[p]+tau[p9])+(1-w[1])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*
phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*phi
[8]*(mu[p]+tau[p9]+eta[p2]))*(w[1]*(phi[5]*(mu[p]+tau[p6])*(1-phi
[6])+phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*(1-phi[7])+
phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-
tau[p8])*(1-phi[8])+phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau
[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])
*(phi[5]*(mu[p]+tau[p6]+eta[p2])*(1-phi[6])+phi[5]*(mu[p]+tau[p6]
+eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi[5]*(mu
[p]+tau[p6]+eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-
mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[5]*(mu[p]+tau[p6]+eta[p2])*
phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])
*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))*(w[1]*(phi[5]*(mu[p]+tau[p6])
*phi[6]*(mu[p]+tau[p7])*phi[7]*(mu[p]+tau[p8])*(1-phi[8])+phi[5]*
(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(mu[p]+tau[p8])*phi
[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[5]*(mu[p]+tau[p6]+eta[p2])*
phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*(1-
phi[8])+phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta
[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta
[p2])))^2*(w[1]*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi
[7]*(mu[p]+tau[p8])*phi[8]*(mu[p]+tau[p9])+(1-w[1])*phi[5]*(mu[p]
+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+
tau[p8]+eta[p2])*phi[8]*(mu[p]+tau[p9]+eta[p2]))*(w[1]*(phi[1]*mu
[p]*phi[2]*(mu[p]+tau[p3])*(1-phi[3])+phi[1]*mu[p]*phi[2]*(mu[p]+
tau[p3])*phi[3]*(1-mu[p]-tau[p4])*(1-phi[4])+phi[1]*mu[p]*phi[2]*
(mu[p]+tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])
*(1-phi[5])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu[p]-
tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*(1-phi
[6])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu[p]-tau[p4])
*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu
[p]-tau[p7])*(1-phi[7])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi
[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-
tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi
[8])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu[p]-tau[p4])
*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu
[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+
(1-w[1])*(phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*
(1-phi[3])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*
phi[3]*(1-mu[p]-tau[p4]-eta[p2])*(1-phi[4])+phi[1]*(mu[p]+eta[p2]
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```
)*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])
*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*(1-phi[5])+phi[1]*(mu[p]+eta
[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta
[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-
eta[p2])*(1-phi[6])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+
eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]
-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau
[p7]-eta[p2])*(1-phi[7])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau
[p3]+eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-
tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]
-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi
[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(1-mu
[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-
mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1
-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^2*(w
[1]*(phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*
phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*(1-phi[6])+phi[1]*
mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]
+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*(1-phi
[7])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*
phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau
[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[1]*mu[p]*phi[2]*(mu
[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]
*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8]
)*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[1]*(mu[p]+eta[p2])*phi
[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]
*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*(1-phi[6]
)+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*
(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu
[p]+tau[p6]+eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+
phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu
[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]
+tau[p6]+eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu
[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu
[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]
+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(1-mu[p]-
tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]
-tau[p9]-eta[p2])))^3*(w[1]*(1-phi[4]+phi[4]*(1-mu[p]-tau[p5])*(1
-phi[5])+phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*(1-phi
[6])+phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-
mu[p]-tau[p7])*(1-phi[7])+phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu
[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1
-phi[8])+phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]
*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau
[p9]))+(1-w[1])*(1-phi[4]+phi[4]*(1-mu[p]-tau[p5]-eta[p2])*(1-phi
[5])+phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta
[p2])*(1-phi[6])+phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]
-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi
[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*
phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])
*(1-phi[8])+phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau
[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-
tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^8*(w[1]*(phi
[4]*(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*(1-phi[6])+phi[4]*(1
-mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*
(1-phi[7])+phi[4]*(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]
*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[4]*(1-
```

```
mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*
phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi
[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*(1-
phi[6])+phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(mu[p]+tau[p6]+
eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi[4]*(1-mu
[p]-tau[p5]-eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(1-mu
[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+
phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*
phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])
*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))*(w[1]*(1-phi[1]+phi[1]*(1-mu
[p])*(1-phi[2])+phi[1]*(1-mu[p])*phi[2]*(1-mu[p]-tau[p3])*(1-phi
[3])+phi[1]*(1-mu[p])*phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-
tau[p4])*(1-phi[4])+phi[1]*(1-mu[p])*phi[2]*(1-mu[p]-tau[p3])*phi
[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*(1-phi[5])+phi[1]*
(1-mu[p])*phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi
[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*(1-phi[6])+phi[1]*
(1-mu[p])*phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi
[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-
tau[p7])*(1-phi[7])+phi[1]*(1-mu[p])*phi[2]*(1-mu[p]-tau[p3])*phi
[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-
tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi
[8])+phi[1]*(1-mu[p])*phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-
tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]
*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau
[p9]))+(1-w[1])*(1-phi[1]+phi[1]*(1-mu[p]-eta[p2])*(1-phi[2])+phi
[1]*(1-mu[p]-eta[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*(1-phi[3])
+phi[1]*(1-mu[p]-eta[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi[3]
*(1-mu[p]-tau[p4]-eta[p2])*(1-phi[4])+phi[1]*(1-mu[p]-eta[p2])*
phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])
*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*(1-phi[5])+phi[1]*(1-mu[p]-eta
[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-
eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]
-eta[p2])*(1-phi[6])+phi[1]*(1-mu[p]-eta[p2])*phi[2]*(1-mu[p]-tau
[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-
tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]
-tau[p7]-eta[p2])*(1-phi[7])+phi[1]*(1-mu[p]-eta[p2])*phi[2]*(1-
mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1
-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*
(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi
[8])+phi[1]*(1-mu[p]-eta[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*
phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])
*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2]
)*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta
[p2])))^33*(w[1]*(phi[2]*(1-mu[p]-tau[p3])*phi[3]*(mu[p]+tau[p4])
*(1-phi[4])+phi[2]*(1-mu[p]-tau[p3])*phi[3]*(mu[p]+tau[p4])*phi
[4]*(1-mu[p]-tau[p5])*(1-phi[5])+phi[2]*(1-mu[p]-tau[p3])*phi[3]*
(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])
*(1-phi[6])+phi[2]*(1-mu[p]-tau[p3])*phi[3]*(mu[p]+tau[p4])*phi
[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-
tau[p7])*(1-phi[7])+phi[2]*(1-mu[p]-tau[p3])*phi[3]*(mu[p]+tau
[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1
-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[2]*(1-mu
[p]-tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi
[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-
tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[2]*(1-mu[p]-tau
[p3]-eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*(1-phi[4])+phi[2]*(1
-mu[p]-tau[p3]-eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-
```

```
mu[p]-tau[p5]-eta[p2])*(1-phi[5])+phi[2]*(1-mu[p]-tau[p3]-eta[p2]
)*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])
*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*(1-phi[6])+phi[2]*(1-mu[p]-tau
[p3]-eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau
[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-
tau[p7]-eta[p2])*(1-phi[7])+phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi
[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi
[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*
phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[2]*(1-mu[p]-tau
[p3]-eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau
[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-
tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]
-tau[p9]-eta[p2]))))*(w[1]*(phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+
tau[p5])*(1-phi[5])+phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])
*phi[5]*(1-mu[p]-tau[p6])*(1-phi[6])+phi[3]*(mu[p]+tau[p4])*phi
[4]*(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau
[p7])*(1-phi[7])+phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*
phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]
-tau[p8])*(1-phi[8])+phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5]
)*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu
[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[3]*(mu[p]+
tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*(1-phi[5])+phi[3]
*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1
-mu[p]-tau[p6]-eta[p2])*(1-phi[6])+phi[3]*(mu[p]+tau[p4]+eta[p2])
*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*
phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi[3]*(mu[p]+tau[p4]
+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-
eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]
-eta[p2])*(1-phi[8])+phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]
+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu
[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-
mu[p]-tau[p9]-eta[p2])))^6*(w[1]*(phi[2]*(mu[p]+tau[p3])*phi[3]*
(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*
(1-phi[6])+phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*
(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])
*(1-phi[7])+phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*
(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])
*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[2]*(mu[p]+tau[p3])*phi
[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau
[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1
-mu[p]-tau[p9]))+(1-w[1])*(phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*
(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*
(mu[p]+tau[p6]+eta[p2])*(1-phi[6])+phi[2]*(mu[p]+tau[p3]+eta[p2])
*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*
phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*
(1-phi[7])+phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+
eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(mu[p]+tau[p6]+
eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]
-eta[p2])*(1-phi[8])+phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]
+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(mu[p]+
tau[p6]+eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]
-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))*(w[1]*(phi
[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])
*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*(1-phi[7])+phi[2]*
(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*phi
[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(1-mu[p]-tau
[p8])*(1-phi[8])+phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*
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phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau
[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])
*(phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*
phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi
[6]*(mu[p]+tau[p7]+eta[p2])*(1-phi[7])+phi[2]*(mu[p]+tau[p3]+eta
[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta
[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta
[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[2]*(mu[p]+
tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau
[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau
[p7]+eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-
tau[p9]-eta[p2])))*(w[1]*(1-phi[2]+phi[2]*(1-mu[p]-tau[p3])*(1-
phi[3])+phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*(1-phi
[4])+phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-
mu[p]-tau[p5])*(1-phi[5])+phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu
[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*(1
-phi[6])+phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]
*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau
[p7])*(1-phi[7])+phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4]
)*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu
[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[2]*(1-mu[p]-
tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]
*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau
[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(1-phi[2]+phi[2]*(1-mu
[p]-tau[p3]-eta[p2])*(1-phi[3])+phi[2]*(1-mu[p]-tau[p3]-eta[p2])*
phi[3]*(1-mu[p]-tau[p4]-eta[p2])*(1-phi[4])+phi[2]*(1-mu[p]-tau
[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-
tau[p5]-eta[p2])*(1-phi[5])+phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi
[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*
phi[5]*(1-mu[p]-tau[p6]-eta[p2])*(1-phi[6])+phi[2]*(1-mu[p]-tau
[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-
tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]
-tau[p7]-eta[p2])*(1-phi[7])+phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi
[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*
phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])
*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[2]*(1-mu[p]-tau
[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-
tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]
-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu
[p]-tau[p9]-eta[p2])))^16*(w[1]*(phi[3]*(mu[p]+tau[p4])*(1-phi[4]
)+phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*(1-phi[5])+phi
[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau
[p6])*(1-phi[6])+phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*
phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*(1-phi[7])+phi
[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau
[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8]
)+phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]
-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi
[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[3]*(mu[p]+tau[p4]+eta[p2])*
(1-phi[4])+phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]
-eta[p2])*(1-phi[5])+phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu
[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*(1-phi[6])+
phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*
phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])
*(1-phi[7])+phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau
[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-
tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi
```

```
[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi
[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*
phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])
))^2*(w[1]*(phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*
(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(mu[p]+tau[p8])*(1-
phi[8])+phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu
[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(mu[p]+tau[p8])*phi[8]
*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[3]*(mu[p]+tau[p4]+eta[p2])*phi
[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]
*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*(1-phi[8]
)+phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*
phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi
[7]*(mu[p]+tau[p8]+eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^3*
(w[1]*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]
+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(mu[p]+tau[p8])*phi[8]*
(mu[p]+tau[p9])+(1-w[1])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*
(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu
[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*phi[8]*(mu[p]
+tau[p9]+eta[p2]))^4*(w[1]*phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu
[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]
*(mu[p]+tau[p7])*phi[7]*(mu[p]+tau[p8])*phi[8]*(mu[p]+tau[p9])+(1
-w[1])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-
eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta
[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta
[p2])*phi[8]*(mu[p]+tau[p9]+eta[p2]))*(w[1]*(phi[3]*(1-mu[p]-tau
[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]
+tau[p7])*(1-phi[7])+phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+tau
[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(1-mu
[p]-tau[p8])*(1-phi[8])+phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+
tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(1-
mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[3]*(1-mu
[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]
+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*(1-phi[7])+phi
[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi
[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]
*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[3]*(1-mu[p]-tau[p4]-eta
[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta
[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta
[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))*(w[1]*phi[1]*mu[p]*phi
[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])
*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu
[p]-tau[p8])*phi[8]*(mu[p]+tau[p9])+(1-w[1])*phi[1]*(mu[p]+eta
[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta
[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta
[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-
eta[p2])*phi[8]*(mu[p]+tau[p9]+eta[p2]))*(w[1]*(phi[3]*(1-mu[p]-
tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*(1-phi[6])
+phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+
tau[p6])*phi[6]*(1-mu[p]-tau[p7])*(1-phi[7])+phi[3]*(1-mu[p]-tau
[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu
[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[3]*(1-mu[p]-
tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-
mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))
+(1-w[1])*(phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]
+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*(1-phi[6])+phi[3]*(1-mu
[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]
+tau[p6]+eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi
```

```
[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi
[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi
[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[3]*(1-mu[p]-tau[p4]-
eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta
[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-
eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))*(w[1]*(phi[1]*mu[p]*
phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau
[p5])*(1-phi[5])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(mu
[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])*(1-
phi[6])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4]
)*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]
-tau[p7])*(1-phi[7])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*
(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])*
phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi
[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*
(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])
*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi
[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+
tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*(1-phi[5])+phi[1]
*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau
[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau
[p6]-eta[p2])*(1-phi[6])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau
[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau
[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-
tau[p7]-eta[p2])*(1-phi[7])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+
tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau
[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-
tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi
[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+
tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-
tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]
-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^9*(w[1]*(phi
[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau
[p6])*phi[6]*(mu[p]+tau[p7])*(1-phi[7])+phi[3]*(1-mu[p]-tau[p4])*
phi[4]*(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau
[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[3]*(1-mu[p]-tau[p4]
)*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+
tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w
[1])*(phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-
eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta
[p2])*(1-phi[7])+phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]
-tau[p5]-eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+
tau[p7]+eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi
[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*
phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi
[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))*
(w[1]*(phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*
(1-mu[p]-tau[p6])*phi[6]*(mu[p]+tau[p7])*(1-phi[7])+phi[3]*(1-mu
[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*
phi[6]*(mu[p]+tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[3]
*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau
[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-
mu[p]-tau[p9]))+(1-w[1])*(phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]
*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi
[6]*(mu[p]+tau[p7]+eta[p2])*(1-phi[7])+phi[3]*(1-mu[p]-tau[p4]-
eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]
-eta[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(1-mu[p]-tau[p8]-
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eta[p2])*(1-phi[8])+phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu
[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(mu
[p]+tau[p7]+eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-
mu[p]-tau[p9]-eta[p2])))*(w[1]*phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3]
)*phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]
-tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(mu[p]+tau[p8])*phi[8]*
(mu[p]+tau[p9])+(1-w[1])*phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau
[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau
[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(mu[p]+tau
[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*phi[8]*(mu[p]+tau
[p9]+eta[p2]))*(w[1]*(phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*
(mu[p]+tau[p4])*(1-phi[4])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*
phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*(1-phi[5])+phi[1]
*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu
[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*(1-phi[6])+phi[1]*mu[p]*phi
[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau
[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*(1-phi[7]
)+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi
[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-
tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[1]*mu[p]*phi[2]*
(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*
phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]
-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[1]*(mu[p]+eta
[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta
[p2])*(1-phi[4])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta
[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta
[p2])*(1-phi[5])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta
[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta
[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*(1-phi[6])+phi[1]*(mu[p]+
eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta
[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-
eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi[1]*(mu
[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]
+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau
[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-
tau[p8]-eta[p2])*(1-phi[8])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+
tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-
tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]
-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu
[p]-tau[p9]-eta[p2])))^8*(w[1]*(1-phi[3]+phi[3]*(1-mu[p]-tau[p4])
*(1-phi[4])+phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*(1-
phi[5])+phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*
(1-mu[p]-tau[p6])*(1-phi[6])+phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-
mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*
(1-phi[7])+phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi
[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-
tau[p8])*(1-phi[8])+phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau
[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1
-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(1-phi[3]+phi
[3]*(1-mu[p]-tau[p4]-eta[p2])*(1-phi[4])+phi[3]*(1-mu[p]-tau[p4]-
eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*(1-phi[5])+phi[3]*(1-mu
[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-
mu[p]-tau[p6]-eta[p2])*(1-phi[6])+phi[3]*(1-mu[p]-tau[p4]-eta[p2]
)*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta
[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi[3]*(1-mu[p]
-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu
[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-
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mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[3]*(1-mu[p]-tau[p4]-eta[p2]
)*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta
[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-
eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^17*(w[1]*(phi[1]*mu
[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]
+tau[p5])*(1-phi[5])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*
(1-mu[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])
*(1-phi[6])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu[p]-
tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*
(1-mu[p]-tau[p7])*(1-phi[7])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*
phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu[p]-
tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi
[8])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu[p]-tau[p4])
*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-
tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w
[1])*(phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi
[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*(1-
phi[5])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi
[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi
[5]*(1-mu[p]-tau[p6]-eta[p2])*(1-phi[6])+phi[1]*(mu[p]+eta[p2])*
phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*
phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*
phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi[1]*(mu[p]+eta[p2]
)*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])
*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*
phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])
*(1-phi[8])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])
*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*
phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])
*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2]
)))*(w[1]*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*
(mu[p]+tau[p7])*phi[7]*(mu[p]+tau[p8])*phi[8]*(mu[p]+tau[p9])+(1-
w[1])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta
[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta
[p2])*phi[8]*(mu[p]+tau[p9]+eta[p2]))^5*(w[1]*(phi[4]*(mu[p]+tau
[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(mu[p]
+tau[p8])*(1-phi[8])+phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6]
)*phi[6]*(mu[p]+tau[p7])*phi[7]*(mu[p]+tau[p8])*phi[8]*(1-mu[p]-
tau[p9]))+(1-w[1])*(phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+
tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau
[p8]+eta[p2])*(1-phi[8])+phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*
(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu
[p]+tau[p8]+eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))*(w[1]*
(phi[4]*(mu[p]+tau[p5])*(1-phi[5])+phi[4]*(mu[p]+tau[p5])*phi[5]*
(1-mu[p]-tau[p6])*(1-phi[6])+phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu
[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*(1-phi[7])+phi[4]*(mu[p]+
tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]
*(1-mu[p]-tau[p8])*(1-phi[8])+phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu
[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*
phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[4]*(mu[p]+tau[p5]+eta[p2]
)*(1-phi[5])+phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau
[p6]-eta[p2])*(1-phi[6])+phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1
-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi
[7])+phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta
[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-
eta[p2])*(1-phi[8])+phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu
[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-
```

```
mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^3*(w[1]
*(phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu[p]-tau[p4])*
phi[4]*(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*(1-phi[6])+phi[1]
*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-
mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*(1
-phi[7])+phi[1]*mu[p]*phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu[p]-tau
[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-
mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[1]*mu[p]*
phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-
tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*
(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[1]*(mu
[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(1-mu[p]-tau
[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(mu[p]+tau
[p6]+eta[p2])*(1-phi[6])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau
[p3]+eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-
tau[p5]-eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(1-mu[p]-
tau[p7]-eta[p2])*(1-phi[7])+phi[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+
tau[p3]+eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]
-tau[p5]-eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(1-mu[p]-
tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi
[1]*(mu[p]+eta[p2])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(1-mu
[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(mu
[p]+tau[p6]+eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-
mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))*(w[1]*
(phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau
[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*phi[7]*(mu[p]
+tau[p8])*(1-phi[8])+phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4]
)*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu[p]+tau
[p7])*phi[7]*(mu[p]+tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*
(phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*
phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi
[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*(1-phi
[8])+phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2]
)*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*
phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*phi
[8]*(1-mu[p]-tau[p9]-eta[p2])))*(w[1]*(phi[2]*(mu[p]+tau[p3])*phi
[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*(1-phi[5])+phi[2]*(mu
[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]
*(1-mu[p]-tau[p6])*(1-phi[6])+phi[2]*(mu[p]+tau[p3])*phi[3]*(mu
[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi
[6]*(1-mu[p]-tau[p7])*(1-phi[7])+phi[2]*(mu[p]+tau[p3])*phi[3]*
(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])*
phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi
[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])
*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu
[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[2]*(mu[p]+
tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau
[p5]+eta[p2])*(1-phi[5])+phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*
(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-
mu[p]-tau[p6]-eta[p2])*(1-phi[6])+phi[2]*(mu[p]+tau[p3]+eta[p2])*
phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi
[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1
-phi[7])+phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta
[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta
[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-
eta[p2])*(1-phi[8])+phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+
tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-
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tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]
-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^2*(w[1]*(phi
[1]*(1-mu[p])*phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*
phi[4]*(mu[p]+tau[p5])*(1-phi[5])+phi[1]*(1-mu[p])*phi[2]*(1-mu
[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*phi
[5]*(1-mu[p]-tau[p6])*(1-phi[6])+phi[1]*(1-mu[p])*phi[2]*(1-mu[p]
-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*
(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*(1-phi[7])+phi[1]*(1-
mu[p])*phi[2]*(1-mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*
(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])
*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[1]*(1-mu[p])*phi[2]*(1-
mu[p]-tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*
phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]
-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[1]*(1-mu[p]-eta
[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-
eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*(1-phi[5])+phi[1]*(1-mu
[p]-eta[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau
[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau
[p6]-eta[p2])*(1-phi[6])+phi[1]*(1-mu[p]-eta[p2])*phi[2]*(1-mu[p]
-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+
tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]
-tau[p7]-eta[p2])*(1-phi[7])+phi[1]*(1-mu[p]-eta[p2])*phi[2]*(1-
mu[p]-tau[p3]-eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*
(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*
(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi
[8])+phi[1]*(1-mu[p]-eta[p2])*phi[2]*(1-mu[p]-tau[p3]-eta[p2])*
phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*
phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])
*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2]
)))*(w[1]*(phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*
(mu[p]+tau[p6])*phi[6]*(mu[p]+tau[p7])*(1-phi[7])+phi[3]*(mu[p]+
tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu
[p]+tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8])+phi[3]*(mu[p]+
tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(mu
[p]+tau[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+
(1-w[1])*(phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+
eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta
[p2])*(1-phi[7])+phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau
[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau
[p7]+eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[3]*
(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu
[p]+tau[p6]+eta[p2])*phi[6]*(mu[p]+tau[p7]+eta[p2])*phi[7]*(1-mu
[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau[p9]-eta[p2])))^2*(w[1]*
(phi[2]*(mu[p]+tau[p3])*(1-phi[3])+phi[2]*(mu[p]+tau[p3])*phi[3]*
(1-mu[p]-tau[p4])*(1-phi[4])+phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu
[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*(1-phi[5])+phi[2]*(mu[p]+
tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]
*(1-mu[p]-tau[p6])*(1-phi[6])+phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu
[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*
phi[6]*(1-mu[p]-tau[p7])*(1-phi[7])+phi[2]*(mu[p]+tau[p3])*phi[3]
*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau
[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*(1-phi[8]
)+phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(1-mu[p]
-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi
[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[2]*
(mu[p]+tau[p3]+eta[p2])*(1-phi[3])+phi[2]*(mu[p]+tau[p3]+eta[p2])
*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*(1-phi[4])+phi[2]*(mu[p]+tau
```

```
[p3]+eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-
tau[p5]-eta[p2])*(1-phi[5])+phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]
*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi
[5]*(1-mu[p]-tau[p6]-eta[p2])*(1-phi[6])+phi[2]*(mu[p]+tau[p3]+
eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]
-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau
[p7]-eta[p2])*(1-phi[7])+phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(1
-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*
(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]
*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[2]*(mu[p]+tau[p3]+eta
[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(1-mu[p]-tau[p5]-
eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]
-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]-tau
[p9]-eta[p2])))^7*(w[1]*(phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-
tau[p5])*phi[5]*(mu[p]+tau[p6])*(1-phi[6])+phi[3]*(mu[p]+tau[p4])
*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-
tau[p7])*(1-phi[7])+phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau
[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-
mu[p]-tau[p8])*(1-phi[8])+phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-
tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*
(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[3]*(mu
[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(mu
[p]+tau[p6]+eta[p2])*(1-phi[6])+phi[3]*(mu[p]+tau[p4]+eta[p2])*
phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*
phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi[3]*(mu[p]+tau[p4]
+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(mu[p]+tau[p6]+
eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]
-eta[p2])*(1-phi[8])+phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu
[p]-tau[p5]-eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(1-mu
[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-
mu[p]-tau[p9]-eta[p2])))*(w[1]*phi[2]*(mu[p]+tau[p3])*phi[3]*(1-
mu[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi
[6]*(1-mu[p]-tau[p7])*phi[7]*(mu[p]+tau[p8])*phi[8]*(mu[p]+tau
[p9])+(1-w[1])*phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(1-mu[p]-tau
[p4]-eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau
[p6]+eta[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(mu[p]+tau
[p8]+eta[p2])*phi[8]*(mu[p]+tau[p9]+eta[p2]))*(w[1]*(phi[2]*(mu
[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*(1-phi[4])+phi[2]*(mu[p]+tau
[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*(1-phi[5])+
phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau
[p5])*phi[5]*(1-mu[p]-tau[p6])*(1-phi[6])+phi[2]*(mu[p]+tau[p3])*
phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-
tau[p6])*phi[6]*(1-mu[p]-tau[p7])*(1-phi[7])+phi[2]*(mu[p]+tau
[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*(1-mu[p]-tau[p5])*phi[5]*(1-
mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(1-mu[p]-tau[p8])*
(1-phi[8])+phi[2]*(mu[p]+tau[p3])*phi[3]*(mu[p]+tau[p4])*phi[4]*
(1-mu[p]-tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau
[p7])*phi[7]*(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])
*(phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*
(1-phi[4])+phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+
eta[p2])*phi[4]*(1-mu[p]-tau[p5]-eta[p2])*(1-phi[5])+phi[2]*(mu
[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu
[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*(1-phi[6])+
phi[2]*(mu[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi
[4]*(1-mu[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*
phi[6]*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi[2]*(mu[p]+tau[p3]
+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu[p]-tau[p5]-
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eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-tau[p7]
-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*(1-phi[8])+phi[2]*(mu
[p]+tau[p3]+eta[p2])*phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(1-mu
[p]-tau[p5]-eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-
mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1
-mu[p]-tau[p9]-eta[p2])))*(w[1]*(phi[3]*(mu[p]+tau[p4])*phi[4]*
(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*(1-phi[6])+phi[3]*(mu[p]+
tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-
mu[p]-tau[p7])*(1-phi[7])+phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]+
tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*
(1-mu[p]-tau[p8])*(1-phi[8])+phi[3]*(mu[p]+tau[p4])*phi[4]*(mu[p]
+tau[p5])*phi[5]*(mu[p]+tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*
(1-mu[p]-tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[3]*(mu
[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]
+tau[p6]+eta[p2])*(1-phi[6])+phi[3]*(mu[p]+tau[p4]+eta[p2])*phi
[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]
*(1-mu[p]-tau[p7]-eta[p2])*(1-phi[7])+phi[3]*(mu[p]+tau[p4]+eta
[p2])*phi[4]*(mu[p]+tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta
[p2])*phi[6]*(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-
eta[p2])*(1-phi[8])+phi[3]*(mu[p]+tau[p4]+eta[p2])*phi[4]*(mu[p]+
tau[p5]+eta[p2])*phi[5]*(mu[p]+tau[p6]+eta[p2])*phi[6]*(1-mu[p]-
tau[p7]-eta[p2])*phi[7]*(1-mu[p]-tau[p8]-eta[p2])*phi[8]*(1-mu[p]
-tau[p9]-eta[p2])))^2*(w[1]*(phi[2]*(mu[p]+tau[p3])*phi[3]*(1-mu
[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*phi[5]*(1-mu[p]-tau[p6])*phi
[6]*(1-mu[p]-tau[p7])*phi[7]*(mu[p]+tau[p8])*(1-phi[8])+phi[2]*
(mu[p]+tau[p3])*phi[3]*(1-mu[p]-tau[p4])*phi[4]*(mu[p]+tau[p5])*
phi[5]*(1-mu[p]-tau[p6])*phi[6]*(1-mu[p]-tau[p7])*phi[7]*(mu[p]+
tau[p8])*phi[8]*(1-mu[p]-tau[p9]))+(1-w[1])*(phi[2]*(mu[p]+tau
[p3]+eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*(mu[p]+tau
[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*(1-mu[p]-
tau[p7]-eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*(1-phi[8])+phi[2]
*(mu[p]+tau[p3]+eta[p2])*phi[3]*(1-mu[p]-tau[p4]-eta[p2])*phi[4]*
(mu[p]+tau[p5]+eta[p2])*phi[5]*(1-mu[p]-tau[p6]-eta[p2])*phi[6]*
(1-mu[p]-tau[p7]-eta[p2])*phi[7]*(mu[p]+tau[p8]+eta[p2])*phi[8]*
(1-mu[p]-tau[p9]-eta[p2])));
```

$$
\begin{aligned}
tarfun := {} & \left(w_1 \left(\phi_1 \mu_p \phi_2 \left(\mu_p + \tau_{p3}\right) \phi_3 \left(\mu_p + \tau_{p4}\right) \phi_4 \left(\mu_p + \tau_{p5}\right) \phi_5 \left(\mu_p + \tau_{p6}\right) \phi_6 \left(\mu_p \right.\right.\right. \\
& \left. + \tau_{p7}\right) \phi_7 \left(\mu_p + \tau_{p8}\right) \left(1 - \phi_8\right) + \phi_1 \mu_p \phi_2 \left(\mu_p + \tau_{p3}\right) \phi_3 \left(\mu_p + \tau_{p4}\right) \phi_4 \left(\mu_p + \tau_{p5}\right) \phi_5 \left(\mu_p \right. \\
& \left. + \tau_{p6}\right) \phi_6 \left(\mu_p + \tau_{p7}\right) \phi_7 \left(\mu_p + \tau_{p8}\right) \phi_8 \left(1 - \mu_p - \tau_{p9}\right)\right) + \left(1 - w_1\right) \left(\phi_1 \left(\mu_p + \eta_{p2}\right) \phi_2 \left(\mu_p \right. \right. \\
& \left. + \tau_{p3} + \eta_{p2}\right) \phi_3 \left(\mu_p + \tau_{p4} + \eta_{p2}\right) \phi_4 \left(\mu_p + \tau_{p5} + \eta_{p2}\right) \phi_5 \left(\mu_p + \tau_{p6} + \eta_{p2}\right) \phi_6 \left(\mu_p + \tau_{p7} \right. \\
& \left. + \eta_{p2}\right) \phi_7 \left(\mu_p + \tau_{p8} + \eta_{p2}\right) \left(1 - \phi_8\right) + \phi_1 \left(\mu_p + \eta_{p2}\right) \phi_2 \left(\mu_p + \tau_{p3} + \eta_{p2}\right) \phi_3 \left(\mu_p + \tau_{p4} \right. \\
& \left. + \eta_{p2}\right) \phi_4 \left(\mu_p + \tau_{p5} + \eta_{p2}\right) \phi_5 \left(\mu_p + \tau_{p6} + \eta_{p2}\right) \phi_6 \left(\mu_p + \tau_{p7} + \eta_{p2}\right) \phi_7 \left(\mu_p + \tau_{p8} \right. \\
& \left. \left. + \eta_{p2}\right) \phi_8 \left(1 - \mu_p - \tau_{p9} - \eta_{p2}\right)\right)\right) \left(w_1 \phi_1 \mu_p \phi_2 \left(\mu_p + \tau_{p3}\right) \phi_3 \left(\mu_p + \tau_{p4}\right) \phi_4 \left(\mu_p \right. \right. \\
& \left. + \tau_{p5}\right) \phi_5 \left(\mu_p + \tau_{p6}\right) \phi_6 \left(\mu_p + \tau_{p7}\right) \phi_7 \left(\mu_p + \tau_{p8}\right) \phi_8 \left(\mu_p + \tau_{p9}\right) + \left(1 - w_1\right) \phi_1 \left(\mu_p \right. \\
& \left. + \eta_{p2}\right) \phi_2 \left(\mu_p + \tau_{p3} + \eta_{p2}\right) \phi_3 \left(\mu_p + \tau_{p4} + \eta_{p2}\right) \phi_4 \left(\mu_p + \tau_{p5} + \eta_{p2}\right) \phi_5 \left(\mu_p + \tau_{p6} \right. \\
& \left. + \eta_{p2}\right) \phi_6 \left(\mu_p + \tau_{p7} + \eta_{p2}\right) \phi_7 \left(\mu_p + \tau_{p8} + \eta_{p2}\right) \phi_8 \left(\mu_p + \tau_{p9} + \eta_{p2}\right)\right)^3 \left(w_1 \left(1 - \phi_8 \right.\right. \\
& \left. \left. + \phi_8 \left(1 - \mu_p - \tau_{p9}\right)\right) + \left(1 - w_1\right) \left(1 - \phi_8 + \phi_8 \left(1 - \mu_p - \tau_{p9} - \eta_{p2}\right)\right)\right)^{17} \left(w_1 \phi_8 \left(\mu_p \right.\right.
\end{aligned}
\tag{2}
$$

$$+\tau_{p9}\right)+\left(1-w_1\right)\phi_8\left(\mu_p+\tau_{p9}+\eta_{p2}\right)\Big)^{12}\left(w_1\left(1-\phi_7+\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1\right.\right.\right.$$
$$\left.\left.\left.-\phi_8\right)+\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(1-\phi_7+\phi_7\left(1-\mu_p-\tau_{p8}\right.\right.\right.$$
$$\left.\left.\left.-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\right)^{21}\left(w_1\phi_7\left(1-\mu_p\right.\right.$$
$$\left.\left.-\tau_{p8}\right)\phi_8\left(\mu_p+\tau_{p9}\right)+\left(1-w_1\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(\mu_p+\tau_{p9}+\eta_{p2}\right)\right)$$
$$\left(w_1\left(\phi_7\left(\mu_p+\tau_{p8}\right)\left(1-\phi_8\right)+\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(\phi_7\left(\mu_p\right.\right.\right.$$
$$\left.\left.\left.+\tau_{p8}+\eta_{p2}\right)\left(1-\phi_8\right)+\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\right)^4\left(w_1\phi_7\left(\mu_p\right.\right.$$
$$\left.\left.+\tau_{p8}\right)\phi_8\left(\mu_p+\tau_{p9}\right)+\left(1-w_1\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(\mu_p+\tau_{p9}+\eta_{p2}\right)\right)$$
$$^{16}\left(w_1\left(\phi_1\mu_p\left(1-\phi_2\right)+\phi_1\mu_p\phi_2\left(1-\mu_p-\tau_{p3}\right)\left(1-\phi_3\right)+\phi_1\mu_p\phi_2\left(1-\mu_p\right.\right.\right.$$
$$\left.\left.-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\left(1-\phi_4\right)+\phi_1\mu_p\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p\right.$$
$$\left.-\tau_{p5}\right)\left(1-\phi_5\right)+\phi_1\mu_p\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p\right.$$
$$\left.-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_1\mu_p\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p\right.$$
$$\left.-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_1\mu_p\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p\right.$$
$$\left.-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_1\mu_p\phi_2\left(1-\mu_p\right.$$
$$\left.-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1\right.$$
$$\left.-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\left(\phi_1\left(\mu_p+\eta_{p2}\right)\left(1-\phi_2\right)+\phi_1\left(\mu_p\right.\right.$$
$$\left.+\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\left(1-\phi_3\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1\right.$$
$$\left.-\mu_p-\tau_{p4}-\eta_{p2}\right)\left(1-\phi_4\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right.$$
$$\left.-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\left(1-\phi_5\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1\right.$$
$$\left.-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)+\phi_1\left(\mu_p\right.$$
$$\left.+\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1\right.$$
$$\left.-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}\right.$$
$$\left.-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1\right.$$
$$\left.-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}\right.$$
$$\left.-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1\right.$$
$$\left.-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)^{13}\left(w_1\left(1-\phi_6\right.\right.$$
$$\left.+\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_6\left(1\right.\right.$$
$$\left.\left.-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(1-\phi_6+\phi_6\left(1-\mu_p-\tau_{p7}\right.\right.$$
$$\left.\left.-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_6\left(1\right.\right.$$
$$\left.\left.-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\Big)^7\left(w_1\left(\phi_6\left(1-\mu_p\right.\right.\right.$$

$$
\begin{aligned}
&-\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\left(1-\phi_8\right)+\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)\\
&+\left(1-w_1\right)\Big(\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\left(1-\phi_8\right)+\phi_6\left(1-\mu_p-\tau_{p7}\right.\\
&\left.-\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)\Big(w_1\,\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(\mu_p\right.\\
&\left.+\tau_{p8}\right)\phi_8\left(\mu_p+\tau_{p9}\right)+\left(1-w_1\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(\mu_p\right.\\
&\left.+\tau_{p9}+\eta_{p2}\right)\Big)\Big(w_1\left(\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\left(1-\phi_8\right)+\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p\right.\right.\\
&\left.\left.+\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\Big(\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\Big(1\\
&-\phi_8\Big)+\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)\Big(w_1\Big(1\\
&-\phi_5+\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)\\
&+\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_5\left(1-\mu_p\right.\\
&\left.-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\Big(1-\phi_5\\
&+\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)+\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right.\\
&\left.-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right.\\
&\left.-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right.\\
&\left.-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)^3\Big(w_1\Big(\phi_1\,\mu_p\,\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p\right.\\
&\left.+\tau_{p5}\right)\left(1-\phi_5\right)+\phi_1\,\mu_p\,\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\\
&\left.-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_1\,\mu_p\,\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\\
&\left.-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_1\,\mu_p\,\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p\right.\\
&\left.+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_1\,\mu_p\,\phi_2\left(1-\mu_p\right.\\
&\left.-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p\right.\\
&\left.-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\Big(\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\Big(1\\
&-\mu_p-\tau_{p4}-\eta_{p2}\Big)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\left(1-\phi_5\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}\right.\\
&\left.-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)\\
&+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}\right.\\
&\left.+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\Big(1\\
&-\mu_p-\tau_{p3}-\eta_{p2}\Big)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right.\\
&\left.-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\Big(1\\
&-\mu_p-\tau_{p3}-\eta_{p2}\Big)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right.\\
&\left.-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)\\
&\left(w_1\,\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(\mu_p+\tau_{p9}\right)+\left(1-w_1\right)\phi_5\left(1-\mu_p\right.\right.
\end{aligned}
$$

$$-\tau_{p6}-\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(\mu_p+\tau_{p9}+\eta_{p2}\right)\Big)\Big(w_1\left(\phi_5\left(\mu_p+\tau_{p6}\right)\left(1-\phi_6\right)+\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\left(1-\phi_6\right)+\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\Big)\Big(w_1\left(\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\left(1-\phi_8\right)+\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\left(1-\phi_8\right)+\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\Big)^2\left(w_1\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(\mu_p+\tau_{p9}\right)+\left(1-w_1\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(\mu_p+\tau_{p9}+\eta_{p2}\right)\right)\left(w_1\left(\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\left(1-\phi_3\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\left(1-\phi_4\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\left(1-\phi_5\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\left(1-\phi_3\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\left(1-\phi_4\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\left(1-\phi_5\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\Big)$$

$$
\begin{aligned}
&{}^{2}\Big(w_1\Big(\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\left(1-\phi_6\right)\\
&+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1\right.\\
&\left.-\phi_7\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p\right.\\
&\left.-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p\right.\\
&\left.+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1\right.\\
&\left.-w_1\right)\Big(\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p\right.\\
&\left.+\tau_{p6}+\eta_{p2}\right)\left(1-\phi_6\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p\right.\\
&\left.+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_1\left(\mu_p\right.\\
&\left.+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}\right.\\
&\left.+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p\right.\\
&\left.+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p\right.\\
&\left.-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)^{3}\Big(w_1\left(1-\phi_4\right.\\
&\left.+\phi_4\left(1-\mu_p-\tau_{p5}\right)\left(1-\phi_5\right)+\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_4\left(1\right.\right.\\
&\left.\left.-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\right.\\
&\left.\left.-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\right.\\
&\left.\left.-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(1-\phi_4\right.\\
&\left.+\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\left(1-\phi_5\right)+\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right.\right.\\
&\left.\left.-\eta_{p2}\right)\left(1-\phi_6\right)+\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right.\right.\\
&\left.\left.-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right.\right.\\
&\left.\left.-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right.\right.\\
&\left.\left.-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\Big)\\
&{}^{8}\Big(w_1\Big(\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\left(1-\phi_6\right)+\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1\right.\\
&\left.-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p\right.\\
&\left.-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p\right.\\
&\left.-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\Big(\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\left(1\right.\\
&\left.-\phi_6\right)+\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)\\
&+\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right.\\
&\left.-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right.\\
&\left.-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)\Big(w_1\left(1-\phi_1+\phi_1\left(1\right.\right.
\end{aligned}
$$

$$
\begin{aligned}
&-\mu_p\right)\left(1-\phi_2\right)+\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p-\tau_{p3}\right)\left(1-\phi_3\right)+\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p\right.\\
&\left.-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\left(1-\phi_4\right)+\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p\right.\\
&\left.-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\left(1-\phi_5\right)+\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p\right.\\
&\left.-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p\right.\\
&\left.-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)\\
&+\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\\
&\left.-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p\right.\\
&\left.-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1\right.\\
&\left.-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(1-\phi_1+\phi_1\left(1-\mu_p-\eta_{p2}\right)\left(1-\phi_2\right)\right.\\
&+\phi_1\left(1-\mu_p-\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\left(1-\phi_3\right)+\phi_1\left(1-\mu_p-\eta_{p2}\right)\phi_2\left(1-\mu_p\right.\\
&\left.-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\left(1-\phi_4\right)+\phi_1\left(1-\mu_p-\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}\right.\\
&\left.-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\left(1-\phi_5\right)+\phi_1\left(1-\mu_p\right.\\
&\left.-\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1\right.\\
&\left.-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)+\phi_1\left(1-\mu_p-\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p\right.\\
&\left.-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1\right.\\
&\left.-\phi_7\right)+\phi_1\left(1-\mu_p-\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p\right.\\
&\left.-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1\right.\\
&\left.-\phi_8\right)+\phi_1\left(1-\mu_p-\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p\right.\\
&\left.-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right.\\
&\left.-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)^{33}\left(w_1\left(\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\left(1-\phi_4\right)\right.\right.\\
&+\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\left(1-\phi_5\right)+\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(\mu_p\right.\\
&\left.+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(\mu_p\right.\\
&\left.+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_2\left(1-\mu_p\right.\\
&\left.-\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p\right.\\
&\left.-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\\
&\left.-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(\phi_2\left(1-\mu_p\right.\right.\\
&\left.-\tau_{p3}-\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\left(1-\phi_4\right)+\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}\right.\\
&\left.+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\left(1-\phi_5\right)+\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}\right.\\
&\left.+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)+\phi_2\left(1-\mu_p-\tau_{p3}\right.
\end{aligned}
$$

$$-\eta_{p2}\Big)\,\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p$$
$$-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}$$
$$-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1$$
$$-\phi_8\right)+\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p$$
$$-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)$$
$$\Big(w_1\left(\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\left(1-\phi_5\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\right.$$
$$-\tau_{p6}\Big)\left(1-\phi_6\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1\right.$$
$$-\phi_7\Big)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p\right.$$
$$-\tau_{p8}\Big)\left(1-\phi_8\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1\right.$$
$$\left.\left.-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\left(1\right.\right.$$
$$-\phi_5\Big)+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)$$
$$+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right.$$
$$-\eta_{p2}\Big)\left(1-\phi_7\right)+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right.$$
$$-\eta_{p2}\Big)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_3\left(\mu_p+\tau_{p4}\right.$$
$$+\eta_{p2}\Big)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p\right.$$
$$\left.\left.-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\Big)^6\Big(w_1\left(\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p\right.\right.$$
$$-\tau_{p5}\Big)\phi_5\left(\mu_p+\tau_{p6}\right)\left(1-\phi_6\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p\right.$$
$$+\tau_{p6}\Big)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p\right.$$
$$-\tau_{p5}\Big)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_2\left(\mu_p\right.$$
$$+\tau_{p3}\Big)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p\right.$$
$$-\tau_{p8}\Big)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\Big(\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1\right.$$
$$-\mu_p-\tau_{p5}-\eta_{p2}\Big)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\left(1-\phi_6\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}\right.$$
$$+\eta_{p2}\Big)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)$$
$$+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}\right.$$
$$+\eta_{p2}\Big)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_2\left(\mu_p+\tau_{p3}\right.$$
$$+\eta_{p2}\Big)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right.$$
$$\left.\left.-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\Big)\Big(w_1\left(\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p\right.\right.$$
$$+\tau_{p4}\Big)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\left(1-\phi_7\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p\right.$$
$$+\tau_{p4}\Big)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_2\left(\mu_p\right.$$

$$+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\left(1-\phi_7\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\right)\left(w_1\left(1-\phi_2+\phi_2\left(1-\mu_p-\tau_{p3}\right)\left(1-\phi_3\right)+\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\left(1-\phi_4\right)+\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\left(1-\phi_5\right)+\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(1-\phi_2+\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\left(1-\phi_3\right)+\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\left(1-\phi_4\right)+\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\left(1-\phi_5\right)+\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)+\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\right)^{16}\left(w_1\left(\phi_3\left(\mu_p+\tau_{p4}\right)\left(1-\phi_4\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\left(1-\phi_5\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\left(1-\phi_4\right)+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\left(1-\phi_5\right)+\phi_3\left(\mu_p+\tau_{p4}\right.$$

$$+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)+\phi_3\left(\mu_p+\tau_{p4}$$
$$+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1$$
$$-\phi_7\right)+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p$$
$$-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}$$
$$-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1$$
$$-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)^2\left(w_1\left(\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p\right.\right.\right.$$
$$+\tau_{p7}\left.\right)\phi_7\left(\mu_p+\tau_{p8}\right)\left(1-\phi_8\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p$$
$$+\tau_{p7}\left.\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\left(\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}\right.\right.$$
$$+\eta_{p2}\left.\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\left(1-\phi_8\right)+\phi_3\left(\mu_p\right.$$
$$+\tau_{p4}+\eta_{p2}\left.\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}\right.$$
$$+\eta_{p2}\left.\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)^3\left(w_1\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p\right.\right.$$
$$+\tau_{p6}\left.\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(\mu_p+\tau_{p9}\right)+\left(1-w_1\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p\right.$$
$$+\tau_{p5}+\eta_{p2}\left.\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(\mu_p+\tau_{p9}\right.$$
$$+\eta_{p2}\left.\right)\Big)^4\left(w_1\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p\right.\right.$$
$$+\tau_{p7}\left.\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(\mu_p+\tau_{p9}\right)+\left(1-w_1\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right.$$
$$-\eta_{p2}\left.\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}\right.$$
$$+\eta_{p2}\left.\right)\phi_8\left(\mu_p+\tau_{p9}+\eta_{p2}\right)\Big)\left(w_1\left(\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p\right.\right.\right.$$
$$+\tau_{p7}\left.\right)\left(1-\phi_7\right)+\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(1\right.$$
$$-\mu_p-\tau_{p8}\left.\right)\left(1-\phi_8\right)+\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p\right.$$
$$+\tau_{p7}\left.\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\left(\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p\right.\right.$$
$$+\tau_{p5}+\eta_{p2}\left.\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\left(1-\phi_7\right)+\phi_3\left(1-\mu_p-\tau_{p4}\right.$$
$$-\eta_{p2}\left.\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right.$$
$$-\eta_{p2}\left.\right)\left(1-\phi_8\right)+\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}\right.$$
$$+\eta_{p2}\left.\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)$$
$$\left(w_1\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p\right.\right.$$
$$-\tau_{p7}\left.\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(\mu_p+\tau_{p9}\right)+\left(1-w_1\right)\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}\right.$$
$$+\eta_{p2}\left.\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right.$$
$$-\eta_{p2}\left.\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(\mu_p+\tau_{p9}+\eta_{p2}\right)\Big)\left(w_1\left(\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p\right.\right.\right.$$
$$+\tau_{p5}\left.\right)\phi_5\left(\mu_p+\tau_{p6}\right)\left(1-\phi_6\right)+\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1\right.$$

$$
\begin{aligned}
&-\mu_p-\tau_{p7}\big)\,\big(1-\phi_7\big)+\phi_3\,\big(1-\mu_p-\tau_{p4}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}\big)\,\phi_6\,\big(1-\mu_p\\
&-\tau_{p7}\big)\,\phi_7\,\big(1-\mu_p-\tau_{p8}\big)\,\big(1-\phi_8\big)+\phi_3\,\big(1-\mu_p-\tau_{p4}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}\big)\,\phi_6\,\big(1\\
&-\mu_p-\tau_{p7}\big)\,\phi_7\,\big(1-\mu_p-\tau_{p8}\big)\,\phi_8\,\big(1-\mu_p-\tau_{p9}\big)\big)+\big(1-w_1\big)\,\big(\phi_3\,\big(1-\mu_p-\tau_{p4}\\
&-\eta_{p2}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}+\eta_{p2}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}+\eta_{p2}\big)\,\big(1-\phi_6\big)+\phi_3\,\big(1-\mu_p-\tau_{p4}\\
&-\eta_{p2}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}+\eta_{p2}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}+\eta_{p2}\big)\,\phi_6\,\big(1-\mu_p-\tau_{p7}-\eta_{p2}\big)\,\big(1-\phi_7\big)\\
&+\phi_3\,\big(1-\mu_p-\tau_{p4}-\eta_{p2}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}+\eta_{p2}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}+\eta_{p2}\big)\,\phi_6\,\big(1-\mu_p-\tau_{p7}\\
&-\eta_{p2}\big)\,\phi_7\,\big(1-\mu_p-\tau_{p8}-\eta_{p2}\big)\,\big(1-\phi_8\big)+\phi_3\,\big(1-\mu_p-\tau_{p4}-\eta_{p2}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}\\
&+\eta_{p2}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}+\eta_{p2}\big)\,\phi_6\,\big(1-\mu_p-\tau_{p7}-\eta_{p2}\big)\,\phi_7\,\big(1-\mu_p-\tau_{p8}-\eta_{p2}\big)\,\phi_8\,\big(1-\mu_p\\
&-\tau_{p9}-\eta_{p2}\big)\big)\big)\,\big(w_1\,\big(\phi_1\,\mu_p\,\phi_2\,\big(\mu_p+\tau_{p3}\big)\,\phi_3\,\big(\mu_p+\tau_{p4}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}\big)\,\big(1-\phi_5\big)\\
&+\phi_1\,\mu_p\,\phi_2\,\big(\mu_p+\tau_{p3}\big)\,\phi_3\,\big(\mu_p+\tau_{p4}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}\big)\,\phi_5\,\big(1-\mu_p-\tau_{p6}\big)\,\big(1-\phi_6\big)\\
&+\phi_1\,\mu_p\,\phi_2\,\big(\mu_p+\tau_{p3}\big)\,\phi_3\,\big(\mu_p+\tau_{p4}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}\big)\,\phi_5\,\big(1-\mu_p-\tau_{p6}\big)\,\phi_6\,\big(1-\mu_p-\tau_{p7}\big)\,\big(1\\
&-\phi_7\big)+\phi_1\,\mu_p\,\phi_2\,\big(\mu_p+\tau_{p3}\big)\,\phi_3\,\big(\mu_p+\tau_{p4}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}\big)\,\phi_5\,\big(1-\mu_p-\tau_{p6}\big)\,\phi_6\,\big(1-\mu_p\\
&-\tau_{p7}\big)\,\phi_7\,\big(1-\mu_p-\tau_{p8}\big)\,\big(1-\phi_8\big)+\phi_1\,\mu_p\,\phi_2\,\big(\mu_p+\tau_{p3}\big)\,\phi_3\,\big(\mu_p+\tau_{p4}\big)\,\phi_4\,\big(\mu_p\\
&+\tau_{p5}\big)\,\phi_5\,\big(1-\mu_p-\tau_{p6}\big)\,\phi_6\,\big(1-\mu_p-\tau_{p7}\big)\,\phi_7\,\big(1-\mu_p-\tau_{p8}\big)\,\phi_8\,\big(1-\mu_p-\tau_{p9}\big)\big)+\big(1\\
&-w_1\big)\,\big(\phi_1\,\big(\mu_p+\eta_{p2}\big)\,\phi_2\,\big(\mu_p+\tau_{p3}+\eta_{p2}\big)\,\phi_3\,\big(\mu_p+\tau_{p4}+\eta_{p2}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}+\eta_{p2}\big)\,\big(1\\
&-\phi_5\big)+\phi_1\,\big(\mu_p+\eta_{p2}\big)\,\phi_2\,\big(\mu_p+\tau_{p3}+\eta_{p2}\big)\,\phi_3\,\big(\mu_p+\tau_{p4}+\eta_{p2}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}+\eta_{p2}\big)\,\phi_5\,\big(1\\
&-\mu_p-\tau_{p6}-\eta_{p2}\big)\,\big(1-\phi_6\big)+\phi_1\,\big(\mu_p+\eta_{p2}\big)\,\phi_2\,\big(\mu_p+\tau_{p3}+\eta_{p2}\big)\,\phi_3\,\big(\mu_p+\tau_{p4}\\
&+\eta_{p2}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}+\eta_{p2}\big)\,\phi_5\,\big(1-\mu_p-\tau_{p6}-\eta_{p2}\big)\,\phi_6\,\big(1-\mu_p-\tau_{p7}-\eta_{p2}\big)\,\big(1-\phi_7\big)\\
&+\phi_1\,\big(\mu_p+\eta_{p2}\big)\,\phi_2\,\big(\mu_p+\tau_{p3}+\eta_{p2}\big)\,\phi_3\,\big(\mu_p+\tau_{p4}+\eta_{p2}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}+\eta_{p2}\big)\,\phi_5\,\big(1-\mu_p\\
&-\tau_{p6}-\eta_{p2}\big)\,\phi_6\,\big(1-\mu_p-\tau_{p7}-\eta_{p2}\big)\,\phi_7\,\big(1-\mu_p-\tau_{p8}-\eta_{p2}\big)\,\big(1-\phi_8\big)+\phi_1\,\big(\mu_p\\
&+\eta_{p2}\big)\,\phi_2\,\big(\mu_p+\tau_{p3}+\eta_{p2}\big)\,\phi_3\,\big(\mu_p+\tau_{p4}+\eta_{p2}\big)\,\phi_4\,\big(\mu_p+\tau_{p5}+\eta_{p2}\big)\,\phi_5\,\big(1-\mu_p-\tau_{p6}\\
&-\eta_{p2}\big)\,\phi_6\,\big(1-\mu_p-\tau_{p7}-\eta_{p2}\big)\,\phi_7\,\big(1-\mu_p-\tau_{p8}-\eta_{p2}\big)\,\phi_8\,\big(1-\mu_p-\tau_{p9}-\eta_{p2}\big)\big)\big)\\
&{}^{9}\,\big(w_1\,\big(\phi_3\,\big(1-\mu_p-\tau_{p4}\big)\,\phi_4\,\big(1-\mu_p-\tau_{p5}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}\big)\,\phi_6\,\big(\mu_p+\tau_{p7}\big)\,\big(1-\phi_7\big)+\phi_3\,\big(1\\
&-\mu_p-\tau_{p4}\big)\,\phi_4\,\big(1-\mu_p-\tau_{p5}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}\big)\,\phi_6\,\big(\mu_p+\tau_{p7}\big)\,\phi_7\,\big(1-\mu_p-\tau_{p8}\big)\,\big(1-\phi_8\big)\\
&+\phi_3\,\big(1-\mu_p-\tau_{p4}\big)\,\phi_4\,\big(1-\mu_p-\tau_{p5}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}\big)\,\phi_6\,\big(\mu_p+\tau_{p7}\big)\,\phi_7\,\big(1-\mu_p\\
&-\tau_{p8}\big)\,\phi_8\,\big(1-\mu_p-\tau_{p9}\big)\big)+\big(1-w_1\big)\,\big(\phi_3\,\big(1-\mu_p-\tau_{p4}-\eta_{p2}\big)\,\phi_4\,\big(1-\mu_p-\tau_{p5}\\
&-\eta_{p2}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}+\eta_{p2}\big)\,\phi_6\,\big(\mu_p+\tau_{p7}+\eta_{p2}\big)\,\big(1-\phi_7\big)+\phi_3\,\big(1-\mu_p-\tau_{p4}\\
&-\eta_{p2}\big)\,\phi_4\,\big(1-\mu_p-\tau_{p5}-\eta_{p2}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}+\eta_{p2}\big)\,\phi_6\,\big(\mu_p+\tau_{p7}+\eta_{p2}\big)\,\phi_7\,\big(1-\mu_p-\tau_{p8}\\
&-\eta_{p2}\big)\,\big(1-\phi_8\big)+\phi_3\,\big(1-\mu_p-\tau_{p4}-\eta_{p2}\big)\,\phi_4\,\big(1-\mu_p-\tau_{p5}-\eta_{p2}\big)\,\phi_5\,\big(\mu_p+\tau_{p6}
\end{aligned}
$$

$$+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\right)$$
$$\left(w_1\left(\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\left(1-\phi_7\right)\right.\right.$$
$$+\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(1-\mu_p\right.$$
$$\left.-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(\mu_p\right.$$
$$\left.+\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1\right.\right.$$
$$-\mu_p-\tau_{p5}-\eta_{p2}\left.\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\left(1-\phi_7\right)+\phi_3\left(1-\mu_p$$
$$-\tau_{p4}-\eta_{p2}\left.\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(1\right.$$
$$-\mu_p-\tau_{p8}-\eta_{p2}\left.\right)\left(1-\phi_8\right)+\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1\right.$$
$$-\mu_p-\tau_{p6}-\eta_{p2}\left.\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)$$
$$\left.\right)\left(w_1\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(\mu_p\right.\right.$$
$$\left.+\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(\mu_p+\tau_{p9}\right)+\left(1-w_1\right)\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p\right.$$
$$+\tau_{p4}+\eta_{p2}\left.\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p\right.$$
$$\left.+\tau_{p8}+\eta_{p2}\right)\phi_8\left(\mu_p+\tau_{p9}+\eta_{p2}\right)\right)\left(w_1\left(\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\left(1-\phi_4\right)\right.\right.$$
$$+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\left(1-\phi_5\right)+\phi_1\mu_p\phi_2\left(\mu_p\right.$$
$$+\tau_{p3}\left.\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_1\mu_p\phi_2\left(\mu_p\right.$$
$$+\tau_{p3}\left.\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)$$
$$+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p\right.$$
$$\left.-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p\right.$$
$$\left.-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1\right.$$
$$-w_1\left.\right)\left(\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\left(1-\phi_4\right)+\phi_1\left(\mu_p\right.\right.$$
$$+\eta_{p2}\left.\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\left(1-\phi_5\right)$$
$$+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1\right.$$
$$-\mu_p-\tau_{p6}-\eta_{p2}\left.\right)\left(1-\phi_6\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}\right.$$
$$+\eta_{p2}\left.\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1\right.$$
$$-\phi_7\left.\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right.$$
$$-\eta_{p2}\left.\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1\right.$$
$$-\phi_8\left.\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right.$$
$$-\eta_{p2}\left.\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1\right.$$
$$\left.-\mu_p-\tau_{p9}-\eta_{p2}\right)\left.\right)\left.\right)^8\left(w_1\left(1-\phi_3+\phi_3\left(1-\mu_p-\tau_{p4}\right)\left(1-\phi_4\right)+\phi_3\left(1-\mu_p\right.\right.\right.$$

$$
\begin{aligned}
&-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\left(1-\phi_5\right)+\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\\
&-\tau_{p6}\left.\right)\left(1-\phi_6\right)+\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p\right.\\
&-\tau_{p7}\left.\right)\left(1-\phi_7\right)+\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p\right.\\
&-\tau_{p7}\left.\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\\
&-\tau_{p6}\left.\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(1-\phi_3\right.\\
&+\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\left(1-\phi_4\right)+\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right.\\
&-\eta_{p2}\left.\right)\left(1-\phi_5\right)+\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right.\\
&-\eta_{p2}\left.\right)\left(1-\phi_6\right)+\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right.\\
&-\eta_{p2}\left.\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right.\\
&-\eta_{p2}\left.\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1\right.\\
&-\phi_8\left.\right)+\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1\right.\\
&-\mu_p-\tau_{p7}-\eta_{p2}\left.\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)^{17}\left(w_1\left(\phi_1\mu_p\phi_2\left(\mu_p\right.\right.\right.\\
&+\tau_{p3}\left.\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\left(1-\phi_5\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p\right.\\
&-\tau_{p4}\left.\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p\right.\\
&-\tau_{p4}\left.\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_1\mu_p\phi_2\left(\mu_p\right.\\
&+\tau_{p3}\left.\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p\right.\\
&-\tau_{p8}\left.\right)\left(1-\phi_8\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\\
&-\tau_{p6}\left.\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\Big(\phi_1\left(\mu_p\right.\\
&+\eta_{p2}\left.\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\left(1-\phi_5\right)\\
&+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1\right.\\
&-\mu_p-\tau_{p6}-\eta_{p2}\left.\right)\left(1-\phi_6\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right.\\
&-\eta_{p2}\left.\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)\\
&+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1\right.\\
&-\mu_p-\tau_{p6}-\eta_{p2}\left.\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_1\left(\mu_p\right.\\
&+\eta_{p2}\left.\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right.\\
&-\eta_{p2}\left.\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)\\
&\left(w_1\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(\mu_p+\tau_{p9}\right)+\left(1\right.\right.\\
&-w_1\left.\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}\right.\\
&+\eta_{p2}\left.\right)\phi_8\left(\mu_p+\tau_{p9}+\eta_{p2}\right)\Big)^5\left(w_1\left(\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p\right.\right.\right.
\end{aligned}
$$

$$+\tau_{p8}\right)\left(1-\phi_8\right)+\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\Big(\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\left(1-\phi_8\right)+\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)\Big(w_1\Big(\phi_4\left(\mu_p+\tau_{p5}\right)\left(1-\phi_5\right)+\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\Big(\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\left(1-\phi_5\right)+\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)+\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)^3\Big(w_1\Big(\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\left(1-\phi_6\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_1\mu_p\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\Big(\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\left(1-\phi_6\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_1\left(\mu_p+\eta_{p2}\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)\Big(w_1\Big(\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\left(1-\phi_8\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\Big)+\left(1-w_1\right)\Big(\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\left(1-\phi_8\right)$$

$$+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)\left(w_1\left(\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\left(1-\phi_5\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\left(1-\phi_5\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\Big)^2\left(w_1\left(\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\left(1-\phi_5\right)+\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_1\left(1-\mu_p\right)\phi_2\left(1-\mu_p-\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\right)+\left(1-w_1\right)\left(\phi_1\left(1-\mu_p-\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\left(1-\phi_5\right)+\phi_1\left(1-\mu_p-\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)+\phi_1\left(1-\mu_p-\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_1\left(1-\mu_p-\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_1\left(1-\mu_p-\eta_{p2}\right)\phi_2\left(1-\mu_p-\tau_{p3}-\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p\right.$$

$$
\begin{aligned}
&-\tau_{p7}-\eta_{p2}\big)\,\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\big)\big)\,\big(w_1\left(\phi_3\left(\mu_p\right.\right.\\
&+\tau_{p4}\big)\,\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\left(1-\phi_7\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p\right.\\
&+\tau_{p5}\big)\,\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p\right.\\
&+\tau_{p5}\big)\,\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(\mu_p+\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\big)+\big(1\\
&-w_1\big)\,\big(\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}\right.\\
&+\eta_{p2}\big)\,\left(1-\phi_7\right)+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p\right.\\
&+\tau_{p7}+\eta_{p2}\big)\,\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}\right.\\
&+\eta_{p2}\big)\,\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(\mu_p+\tau_{p7}+\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right.\\
&\left.-\eta_{p2}\big)\big)\big)^2\,\big(w_1\left(\phi_2\left(\mu_p+\tau_{p3}\right)\left(1-\phi_3\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\left(1-\phi_4\right)\right.\\
&+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\left(1-\phi_5\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p\right.\\
&-\tau_{p4}\big)\,\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\left(1-\phi_6\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p\right.\\
&-\tau_{p4}\big)\,\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_2\left(\mu_p\right.\\
&+\tau_{p3}\big)\,\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1\right.\\
&-\mu_p-\tau_{p8}\big)\,\left(1-\phi_8\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\\
&-\tau_{p6}\big)\,\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1-\mu_p-\tau_{p9}\right)\big)+\left(1-w_1\right)\,\big(\phi_2\left(\mu_p+\tau_{p3}\right.\\
&+\eta_{p2}\big)\,\left(1-\phi_3\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\left(1-\phi_4\right)+\phi_2\left(\mu_p+\tau_{p3}\right.\\
&+\eta_{p2}\big)\,\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\left(1-\phi_5\right)+\phi_2\left(\mu_p+\tau_{p3}\right.\\
&+\eta_{p2}\big)\,\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1\right.\\
&-\phi_6\big)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p\right.\\
&-\tau_{p6}-\eta_{p2}\big)\,\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right.\\
&-\eta_{p2}\big)\,\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1\right.\\
&-\mu_p-\tau_{p8}-\eta_{p2}\big)\,\left(1-\phi_8\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(1-\mu_p\right.\\
&-\tau_{p5}-\eta_{p2}\big)\,\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right.\\
&\left.-\eta_{p2}\big)\,\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\big)\big)^7\,\big(w_1\left(\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p\right.\right.\\
&+\tau_{p6}\big)\,\left(1-\phi_6\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1\right.\\
&-\phi_7\big)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p\right.\\
&-\tau_{p8}\big)\,\left(1-\phi_8\right)+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1\right.\\
&-\mu_p-\tau_{p8}\big)\,\phi_8\left(1-\mu_p-\tau_{p9}\right)\big)+\left(1-w_1\right)\,\big(\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right.\\
&-\eta_{p2}\big)\,\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\left(1-\phi_6\right)+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right.
\end{aligned}
$$

$$
\begin{aligned}
&-\eta_{p2}\big)\,\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_3\left(\mu_p+\tau_{p4}\right.\\
&+\eta_{p2}\big)\,\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p\right.\\
&-\tau_{p8}-\eta_{p2}\big)\left(1-\phi_8\right)+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}\right.\\
&+\eta_{p2}\big)\,\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\big)\big)\\
&\left(w_1\,\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(\mu_p\right.\right.\\
&+\tau_{p8}\big)\,\phi_8\left(\mu_p+\tau_{p9}\right)+\left(1-w_1\right)\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p\right.\\
&+\tau_{p5}+\eta_{p2}\big)\,\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(\mu_p\right.\\
&+\tau_{p9}+\eta_{p2}\big)\big)\left(w_1\left(\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\left(1-\phi_4\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p\right.\right.\right.\\
&+\tau_{p4}\big)\,\phi_4\left(1-\mu_p-\tau_{p5}\right)\left(1-\phi_5\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1\right.\\
&-\mu_p-\tau_{p6}\big)\left(1-\phi_6\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p\right.\\
&-\tau_{p6}\big)\,\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1\right.\\
&-\mu_p-\tau_{p6}\big)\,\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(\mu_p\right.\\
&+\tau_{p4}\big)\,\phi_4\left(1-\mu_p-\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1\right.\\
&-\mu_p-\tau_{p9}\big)\big)+\left(1-w_1\right)\left(\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\left(1-\phi_4\right)+\phi_2\left(\mu_p\right.\right.\\
&+\tau_{p3}+\eta_{p2}\big)\,\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\left(1-\phi_5\right)+\phi_2\left(\mu_p+\tau_{p3}\right.\\
&+\eta_{p2}\big)\,\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\left(1-\phi_6\right)\\
&+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right.\\
&-\eta_{p2}\big)\,\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\left(1-\phi_7\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}\right.\\
&+\eta_{p2}\big)\,\phi_4\left(1-\mu_p-\tau_{p5}-\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1\right.\\
&-\mu_p-\tau_{p8}-\eta_{p2}\big)\left(1-\phi_8\right)+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(1-\mu_p-\tau_{p5}\right.\\
&-\eta_{p2}\big)\,\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\phi_8\left(1\right.\\
&-\mu_p-\tau_{p9}-\eta_{p2}\big)\big)\big)\left(w_1\left(\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\left(1-\phi_6\right)\right.\right.\\
&+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\left(1-\phi_7\right)+\phi_3\left(\mu_p\right.\\
&+\tau_{p4}\big)\,\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\left(1-\phi_8\right)\\
&+\phi_3\left(\mu_p+\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(\mu_p+\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right)\phi_8\left(1\right.\\
&-\mu_p-\tau_{p9}\big)\big)+\left(1-w_1\right)\left(\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}\right.\right.\\
&+\eta_{p2}\big)\left(1-\phi_6\right)+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1\right.\\
&-\mu_p-\tau_{p7}-\eta_{p2}\big)\left(1-\phi_7\right)+\phi_3\left(\mu_p+\tau_{p4}+\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}\right.\\
&+\eta_{p2}\big)\,\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}-\eta_{p2}\right)\left(1-\phi_8\right)+\phi_3\left(\mu_p+\tau_{p4}\right.
\end{aligned}
$$

$$+\eta_{p2})\,\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(\mu_p+\tau_{p6}+\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(1-\mu_p-\tau_{p8}\right.$$
$$\left.-\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\Big)\Big)^2\left(w_1\left(\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p\right.\right.$$
$$\left.+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\left(1-\phi_8\right)+\phi_2\left(\mu_p+\tau_{p3}\right)\phi_3\left(1\right.$$
$$\left.-\mu_p-\tau_{p4}\right)\phi_4\left(\mu_p+\tau_{p5}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right)\phi_6\left(1-\mu_p-\tau_{p7}\right)\phi_7\left(\mu_p+\tau_{p8}\right)\phi_8\left(1-\mu_p\right.$$
$$\left.-\tau_{p9}\right)\Big)+\left(1-w_1\right)\left(\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}\right.\right.$$
$$\left.+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\left(1-\phi_8\right)$$
$$+\phi_2\left(\mu_p+\tau_{p3}+\eta_{p2}\right)\phi_3\left(1-\mu_p-\tau_{p4}-\eta_{p2}\right)\phi_4\left(\mu_p+\tau_{p5}+\eta_{p2}\right)\phi_5\left(1-\mu_p-\tau_{p6}\right.$$
$$\left.\left.-\eta_{p2}\right)\phi_6\left(1-\mu_p-\tau_{p7}-\eta_{p2}\right)\phi_7\left(\mu_p+\tau_{p8}+\eta_{p2}\right)\phi_8\left(1-\mu_p-\tau_{p9}-\eta_{p2}\right)\right)\Big)$$

```
> # constraints #
>
  constr:=[phi[1] = 0 .. 1, phi[2] = 0 .. 1, phi[3] = 0 .. 1, phi
  [4] = 0 .. 1, phi[5] = 0 .. 1, phi[6] = 0 .. 1, phi[7] = 0 .. 1,
  phi[8] = 0 .. 1, mu[p] = 0 .. 1, mu[p]+eta[p2] = 0 .. 1, mu[p]+
  tau[p3] = 0 .. 1, mu[p]+tau[p4] = 0 .. 1, mu[p]+tau[p5] = 0 .. 1,
  mu[p]+tau[p6] = 0 .. 1, mu[p]+tau[p7] = 0 .. 1, mu[p]+tau[p8] = 0
  .. 1, mu[p]+tau[p9] = 0 .. 1, mu[p]+tau[p3]+eta[p2] = 0 .. 1, mu
  [p]+tau[p4]+eta[p2] = 0 .. 1, mu[p]+tau[p5]+eta[p2] = 0 .. 1, mu
  [p]+tau[p6]+eta[p2] = 0 .. 1, mu[p]+tau[p7]+eta[p2] = 0 .. 1, mu
  [p]+tau[p8]+eta[p2] = 0 .. 1, mu[p]+tau[p9]+eta[p2] = 0 .. 1, w
  [1] = 0 .. 1];
  constrp:=[eta[p2] = 0 .. 1, mu[p] = 0 .. 1, phi[1] = 0 .. 1, phi
  [2] = 0 .. 1, phi[3] = 0 .. 1, phi[4] = 0 .. 1, phi[5] = 0 .. 1,
  phi[6] = 0 .. 1, phi[7] = 0 .. 1, phi[8] = 0 .. 1, tau[p3] = 0 ..
  1, tau[p4] = 0 .. 1, tau[p5] = 0 .. 1, tau[p6] = 0 .. 1, tau[p7]
  = 0 .. 1, tau[p8] = 0 .. 1, tau[p9] = 0 .. 1, w[1] = 0 .. 1];
```

$$constr := \left[\phi_1 = 0..1, \phi_2 = 0..1, \phi_3 = 0..1, \phi_4 = 0..1, \phi_5 = 0..1, \phi_6 = 0..1, \phi_7 = 0..1, \phi_8 = 0..1, \mu_p = 0\right.$$
$$..1, \mu_p+\eta_{p2} = 0..1, \mu_p+\tau_{p3} = 0..1, \mu_p+\tau_{p4} = 0..1, \mu_p+\tau_{p5} = 0..1, \mu_p+\tau_{p6} = 0..1, \mu_p+\tau_{p7}$$
$$= 0..1, \mu_p+\tau_{p8} = 0..1, \mu_p+\tau_{p9} = 0..1, \mu_p+\tau_{p3}+\eta_{p2} = 0..1, \mu_p+\tau_{p4}+\eta_{p2} = 0..1, \mu_p$$
$$+\tau_{p5}+\eta_{p2} = 0..1, \mu_p+\tau_{p6}+\eta_{p2} = 0..1, \mu_p+\tau_{p7}+\eta_{p2} = 0..1, \mu_p+\tau_{p8}+\eta_{p2} = 0..1, \mu_p$$
$$\left.+\tau_{p9}+\eta_{p2} = 0..1, w_1 = 0..1\right]$$

$$constrp := \left[\eta_{p2} = 0..1, \mu_p = 0..1, \phi_1 = 0..1, \phi_2 = 0..1, \phi_3 = 0..1, \phi_4 = 0..1, \phi_5 = 0..1, \phi_6 = 0..1, \phi_7\right. \quad (3)$$
$$= 0..1, \phi_8 = 0..1, \tau_{p3} = 0..1, \tau_{p4} = 0..1, \tau_{p5} = 0..1, \tau_{p6} = 0..1, \tau_{p7} = 0..1, \tau_{p8} = 0..1, \tau_{p9} = 0$$
$$\left...1, w_1 = 0..1\right]$$

```
> #?GlobalOptima
```

```
> st:=time():
  ans:=GlobalOptima(log(tarfun),constr,evaluationlimit=50000,
  pointrange=constrp,maximize);
  time()-st;
```

$$ans := \left[-464.740275695324, \left[\eta_{p2} = 0.835143124373203, \mu_p = 0.164856875626797, \phi_1 = 0.781623921784543, \phi_2 = 0.723447393880300, \phi_3 = 0.861743787376978, \phi_4 = 0.813664828121811, \phi_5 = 0.665505711747246, \phi_6 = 0.679023347293202, \phi_7 = 0.833122494934872, \phi_8 = 0.798877704548074, \tau_{p3} = -0.0637249317731823, \tau_{p4} = -0.150817738401393, \tau_{p5} = -0.113497480732619, \tau_{p6} = -0.119465891412593, \tau_{p7} = -0.113572184068621, \tau_{p8} = -0.0954637584691755, \tau_{p9} = -0.164856875626797, w_1 = 0.361195146970870\right], 6138\right]$$

228.002 **(4)**

```
> ans[2]
Warning, inserted missing semicolon at end of statement
```

$$\left[\eta_{p2} = 0.835143124373203, \mu_p = 0.164856875626797, \phi_1 = 0.781623921784543, \phi_2 = 0.723447393880300, \phi_3 = 0.861743787376978, \phi_4 = 0.813664828121811, \phi_5 = 0.665505711747246, \phi_6 = 0.679023347293202, \phi_7 = 0.833122494934872, \phi_8 = 0.798877704548074, \tau_{p3} = -0.0637249317731823, \tau_{p4} = -0.150817738401393, \tau_{p5} = -0.113497480732619, \tau_{p6} = -0.119465891412593, \tau_{p7} = -0.113572184068621, \tau_{p8} = -0.0954637584691755, \tau_{p9} = -0.164856875626797, w_1 = 0.361195146970870\right]$$ **(5)**

```
>
>
> st:=time():
  ans2:=GlobalOptima(log(tarfun),constr,evaluationlimit=50000,
  pointrange=constrp,maximize);
  time()-st;
```

$$ans2 := \left[-464.367016128744, \left[\eta_{p2} = -0.828424945986499, \mu_p = 1., \phi_1 = 0.766409589857496, \phi_2 = 0.757801264967705, \phi_3 = 0.869836373555665, \phi_4 = 0.813203584688734, \phi_5 = 0.655877656296759, \phi_6 = 0.715640281419449, \phi_7 = 0.831692489425571, \phi_8 = 0.847613585618563, \tau_{p3} = -0.0496961184099112, \tau_{p4} = -0.153322469349859, \tau_{p5} = -0.114230551824397, \tau_{p6} = -0.120759689527698, \tau_{p7} = -0.120580613576486, \tau_{p8} = -0.0850362965533046, \tau_{p9} = -0.171575054013500, w_1 = 0.629997663276540\right], 9504\right]$$

289.343 **(6)**