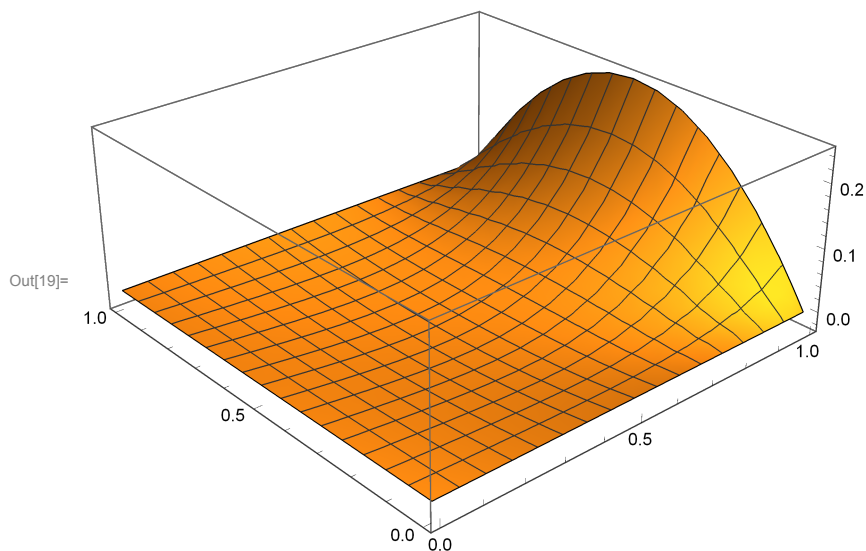


```
In[22]:= DSolve[{D[u[x, y], {x, 2}] + D[u[x, y], {y, 2}] - 6 x y (1 - y) - 2 x^3 == 0,
  u[0, y] == 0, u[1, y] == y (1 - y), u[x, 0] == 0, u[x, 1] == 0},
  u, {x, y}] (* Symbolic Solution Can't find *)
```

```
Out[22]:= DSolve[{ -2 x^3 - 6 x (1 - y) y + u^{(0,2)}[x, y] + u^{(2,0)}[x, y] == 0,
  u[0, y] == 0, u[1, y] == (1 - y) y, u[x, 0] == 0, u[x, 1] == 0}, u, {x, y}]
```

```
sol = NDSolve[{D[u[x, y], {x, 2}] + D[u[x, y], {y, 2}] - 6 x y (1 - y) - 2 x^3 == 0, u[0, y] == 0,
  u[1, y] == y (1 - y), u[x, 0] == 0, u[x, 1] == 0}, u, {x, 0, 1}, {y, 0, 1}];
(* Numeric Solution *)
```

```
In[19]:= Plot3D[u[x, y] /. sol, {x, 0, 1}, {y, 0, 1}, PlotRange -> All]
```



```
In[17]:= Show[{Plot[u[x, 1/2] /. sol, {x, 0, 1}], Plot[u[1, y] /. sol, {y, 0, 1}]}]
```

