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> restart;
> interface(version);
      Standard Worksheet Interface, Maple 2022.2, Windows 10, October 23 2022 Build ID 1657361
> _EnvUseHeavisideAsUnitStep:=true;
expr:=(s+exp(-Pi*s)-exp(-2*Pi*s))/(s*(s^2+2*s+2));
inttrans:-invlaplace(expr,s,t);
Y:=convert(%,piecewise);
#remove all entries in piecewise which has undefined

```

(1)

$_EnvUseHeavisideAsUnitStep := true$

$$expr := \frac{s + e^{K \pi s} K e^{K 2 \pi s}}{s (s^2 + 2 s + 2)}$$

$$e^{K t} \sin(t) + \frac{(K 1 + e^{K t + 2 \pi} (\cos(t) + \sin(t))) \text{Heaviside}(t K 2 \pi)}{2} \\ + \frac{(1 + e^{K t + \pi} (\cos(t) + \sin(t))) \text{Heaviside}(t K \pi)}{2}$$

$$Y := \begin{cases} e^{K t} \sin(t) & t < \pi \\ e^{K t} \sin(t) + \frac{1}{2} + \frac{e^{K t + \pi} (\cos(t) + \sin(t))}{2} & t < 2 \pi \\ e^{K t} \sin(t) + \frac{e^{K t + 2 \pi} (\cos(t) + \sin(t))}{2} + \frac{e^{K t + \pi} (\cos(t) + \sin(t))}{2} & 2 \pi \leq t \end{cases}$$

(2)

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