```
> restart
> Equat := diff(x(t), t$2) - 5 diff(x(t), t) + 6·x(t) = 0
```

$$Equat := \frac{d^2}{dt^2} x(t) - 5 \left(\frac{d}{dt} x(t) \right) + 6\, x(t) = 0 \tag{1}$$

```
> InitCondit := x(0) = 4, D(x)(0) = -8
```

$$InitCondit := x(0) = 4,\ D(x)(0) = -8 \tag{2}$$

```
> with(inttrans) :
> LapTransEquat := subs(InitCondit, laplace(Equat, t, s))
```

$$LapTransEquat := s^2\, laplace(x(t), t, s) + 28 - 4\, s - 5\, s\, laplace(x(t), t, s) + 6\, laplace(x(t), t, s) = 0 \tag{3}$$

```
> LapTransPartSol := isolate(LapTransEquat, laplace(x(t), t, s))
```

$$LapTransPartSol := laplace(x(t), t, s) = \frac{-28 + 4\, s}{s^2 - 5\, s + 6} \tag{4}$$

```
> PartSolution := invlaplace(LapTransPartSol, s, t)
```

$$PartSolution := x(t) = -16\, e^{3\,t} + 20\, e^{2\,t} \tag{5}$$

```
> G(s) := s/(s··2 + 2·s + 2)
```

$$G(s) := \frac{s}{s^2 + 2\, s + 2} \tag{6}$$

```
> g(t) := expand(invlaplace(G(s), s, t))
```

$$g(t) := \frac{\cos(t)}{e^t} - \frac{\sin(t)}{e^t} \tag{7}$$

```
>
>
>
```