```
> restart
> F := 4·s/(s··2 + 16)··2
```

$$F := \frac{4\,s}{\left(s^2 + 16\right)^2} \tag{1}$$

```
> with(inttrans) :
> g := invlaplace(4/(s··2 + 16), s, t)
```

$$g := \sin(4\,t) \tag{2}$$

```
> h := invlaplace(s/(s··2 + 16), s, t)
```

$$h := \cos(4\,t) \tag{3}$$

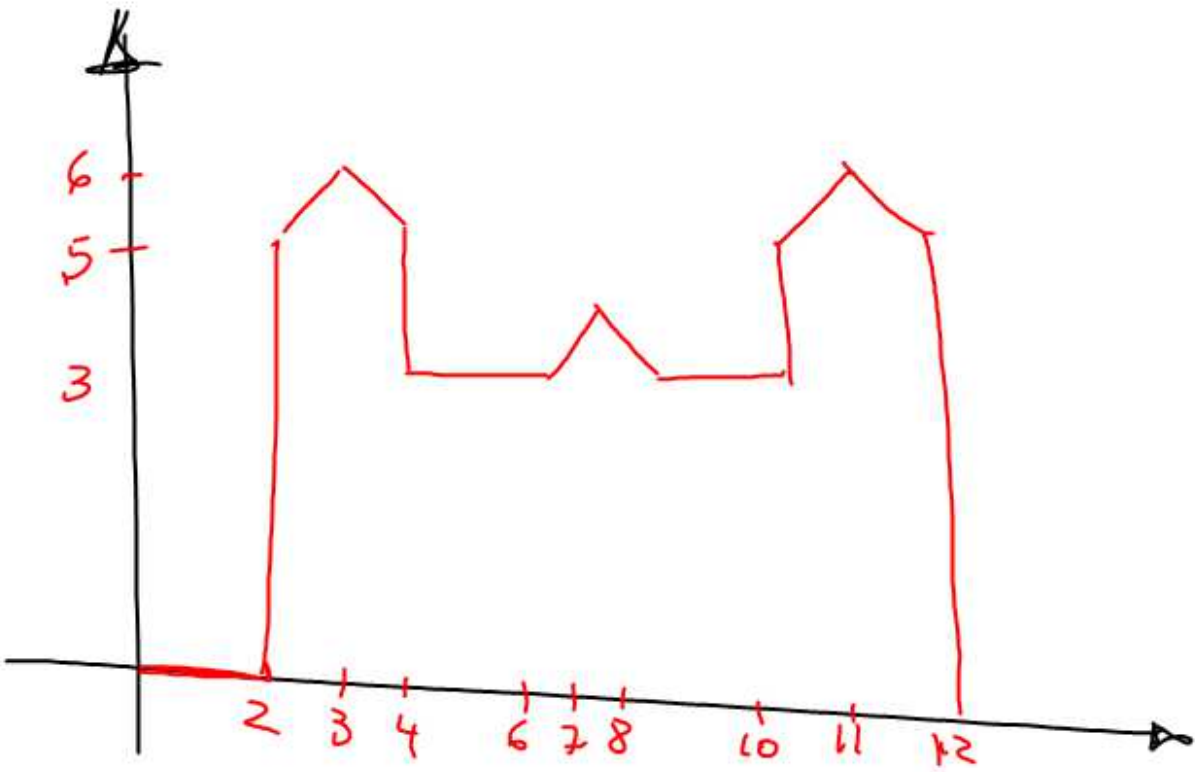
```
> f := int(sin(4·tau)·cos(4·(t − tau)), tau = 0..t)
```

$$f := \frac{1}{2}\sin(4\,t)\,t \tag{4}$$

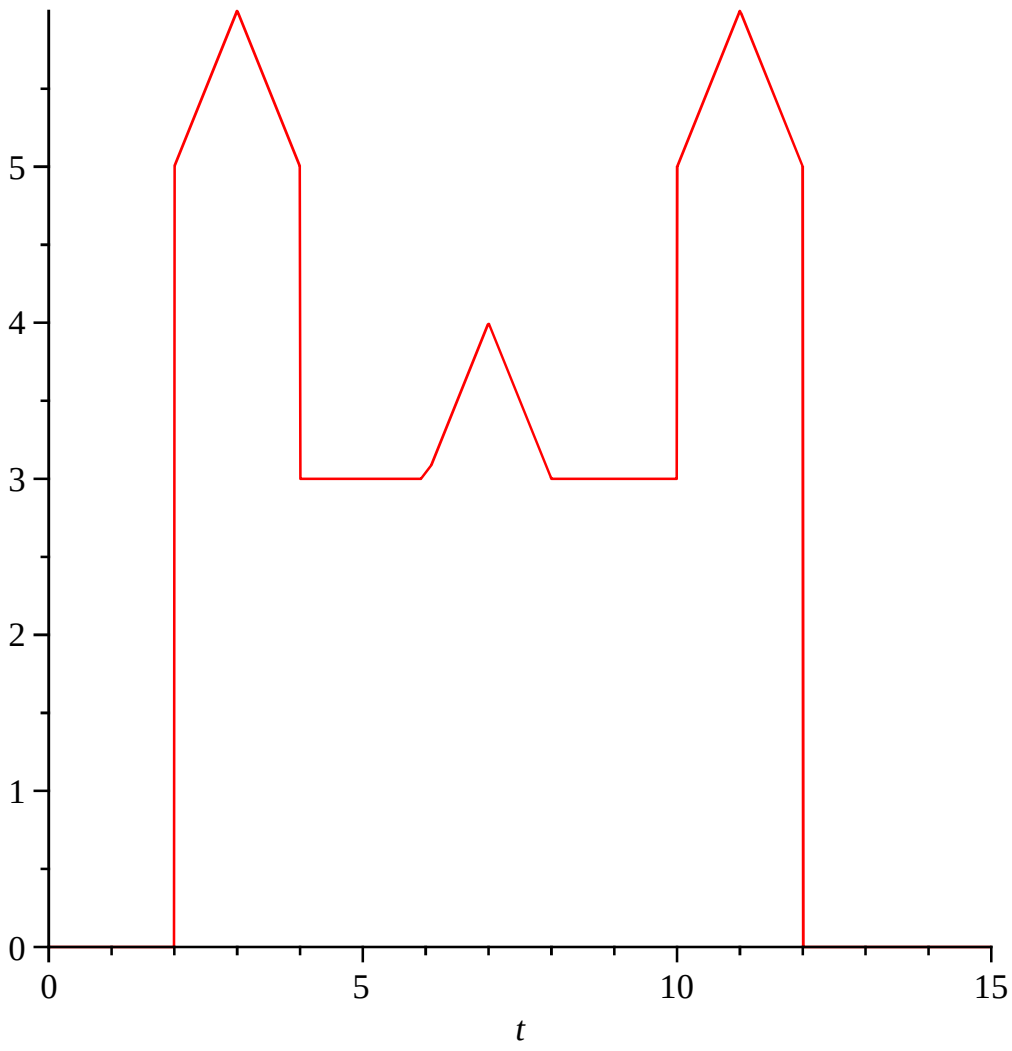
```
> f_alterna := invlaplace(F, s, t)
```

$$f_{alterna} := \frac{1}{2}\sin(4\,t)\,t \tag{5}$$

```
> restart
>
```




```
> Castle := 5·Heaviside(t − 2) + (t − 2)·Heaviside(t − 2) − 2·(t − 3)·Heaviside(t − 3) + (t
    − 4)·Heaviside(t − 4) − 2·Heaviside(t − 4) + (t − 6)Heaviside(t − 6) − 2·(t − 7)
    ·Heaviside(t − 7) + (t − 8)Heaviside(t − 8) + 2·Heaviside(t − 10) + (t
    − 10)Heaviside(t − 10) − 2·(t − 11)·Heaviside(t − 11) + (t − 12)·Heaviside(t − 12)
    − 5·Heaviside(t − 12) : plot(Castle, t = 0..15)
```




```
> with(inttrans) :
> TransLapCastillo := laplace(Castle, t, s)
```

$$TransLapCastillo := \frac{e^{-2s} + e^{-12s} - 2e^{-11s} + e^{-10s} + e^{-8s} - 2e^{-7s} + e^{-6s} + e^{-4s} - 2e^{-3s}}{s^2} + \frac{5e^{-2s} - 5e^{-12s} + 2e^{-10s} - 2e^{-4s}}{s} \quad \textbf{(6)}$$

```
>
>
>
>
>
```