

```
> with(inttrans)
[addtable, fourier, fouriercos, fouriersin, hankel, hilbert, invfourier, invhilbert, invlaplace,
  invmellin, laplace, mellin, savetable] (1)
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```
> # 1
laplace( Heaviside(1) + Heaviside( (2*a - t)/a ) + Heaviside( (t - 4*a)/a ), t, p ) assuming a
  :: posint
      2 - e-2pa + e-4pa
      p (2)
```

```
> # 2
invlaplace( (p + 4)/(p2 + 4*p + 5), p, t )
      e-2t (cos(t) + 2 sin(t)) (3)
```

```
> # 3
dsolve( {y''(t) + y(t) = sinh(t), y(0) = 2, y'(0) = 1} )
      1/2 sin(t) + 2 cos(t) + 1/4 (e2t - 1) e-t (4)
```

```
> # 4
dsolve( {x''(t) + 4*x'(t) + 29*x(t) = exp(-2*t), x(0) = 1, x'(0) = 1} )
      3/5 e-2t sin(5 t) + 24/25 e-2t cos(5 t) + 1/25 e-2t (5)
```

```
> # 5
sys2 := diff(x(t), t) = x(t) + 2*y(t), diff(y(t), t) = 2*x(t) + y(t) + 1; fcns2 := {x(t), y(t)};
dsolve( {sys2, x(0) = 0, y(0) = 5}, fcns2);
      d/dt x(t) = x(t) + 2 y(t), d/dt y(t) = 2 x(t) + y(t) + 1
      fcns2 := {x(t), y(t)}
      {x(t) = 8/3 e3t - 2 e-t - 2/3, y(t) = 8/3 e3t + 2 e-t + 1/3} (6)
```