

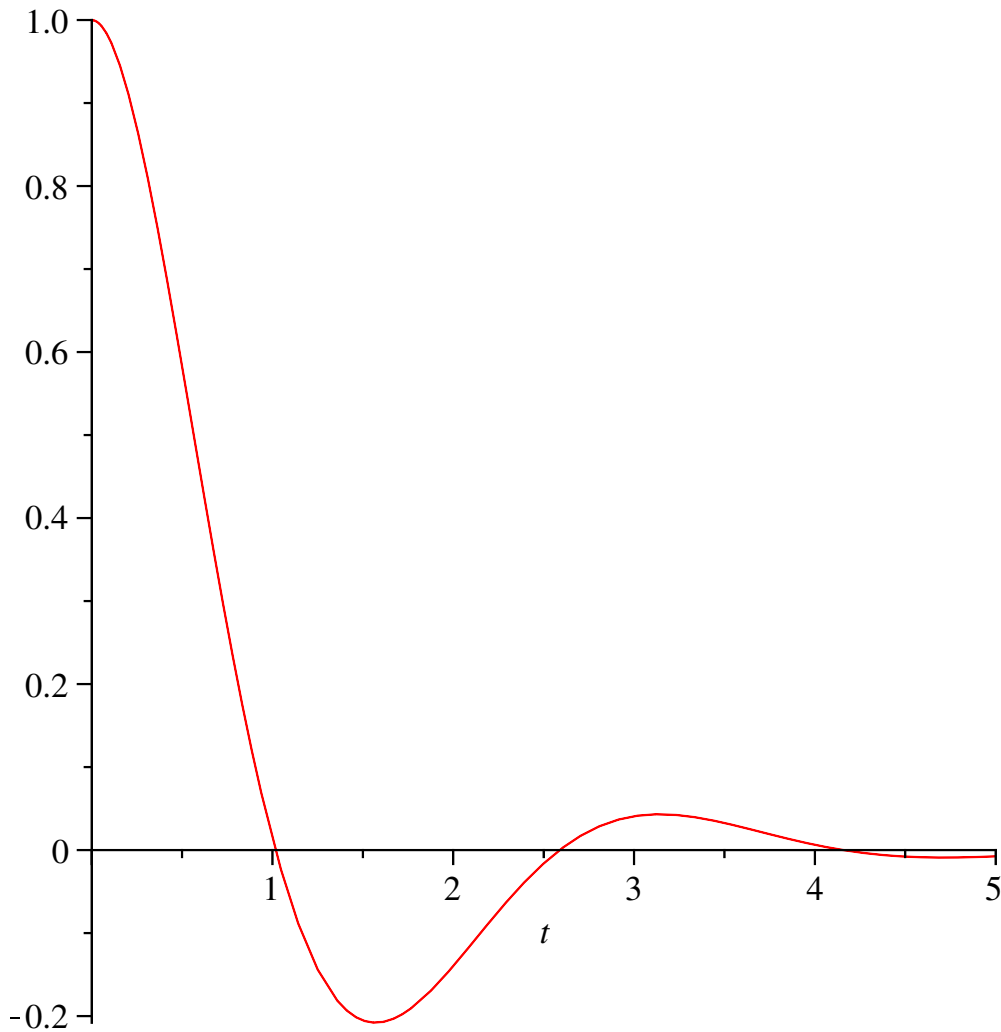
```
> DE1A:=diff(y(t),t$2)+2*diff(y(t),t)+5*y(t)=0;
```

$$DE1A := \frac{d^2}{dt^2} y(t) + 2 \left(\frac{d}{dt} y(t) \right) + 5 y(t) = 0 \quad (1)$$

```
> Y:=dsolve({DE1A,y(0)=1, D(y)(0)=0},y(t));
```

$$Y := y(t) = \frac{1}{2} e^{-t} \sin(2t) + e^{-t} \cos(2t) \quad (2)$$

```
> plot(rhs(Y),t=0..5);
```



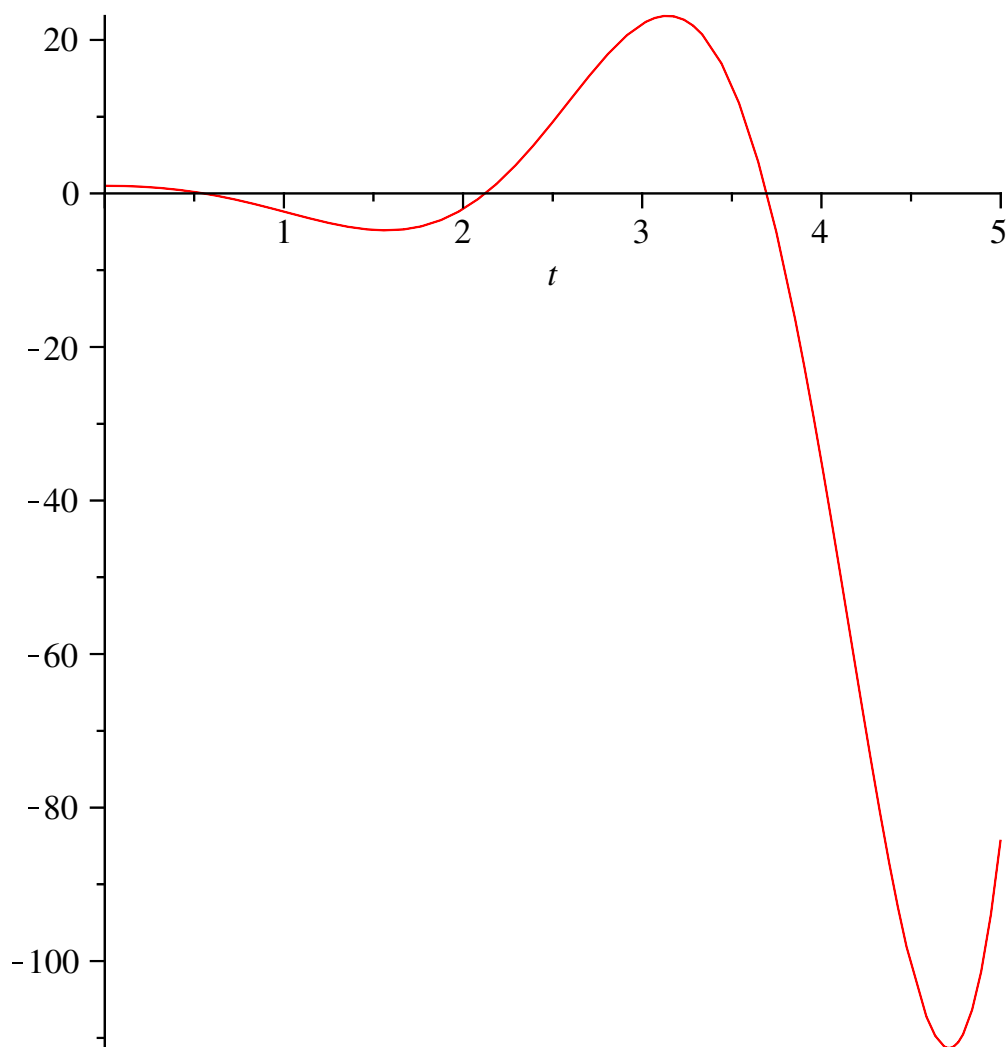
```
> DE1B:=diff(y(t),t$2)-2*diff(y(t),t)+5*y(t)=0;
```

$$DE1B := \frac{d^2}{dt^2} y(t) - 2 \left(\frac{d}{dt} y(t) \right) + 5 y(t) = 0 \quad (3)$$

```
> YB:=dsolve({DE1B,y(0)=1, D(y)(0)=0},y(t));
```

$$YB := y(t) = -\frac{1}{2} e^t \sin(2t) + e^t \cos(2t) \quad (4)$$

```
> plot(rhs(YB),t=0..5);
```



```
> DE1C:=diff(y(t),t$2)+4*y(t)=0;
```

$$DE1C := \frac{d^2}{dt^2} y(t) + 4 y(t) = 0$$

(5)

```
> YC:=dsolve({DE1C,y(0)=1, D(y)(0)=1},y(t));
```

$$YC := y(t) = \frac{1}{2} \sin(2t) + \cos(2t)$$

(6)

```
> plot(rhs(YC),t=0..5);
```

