>

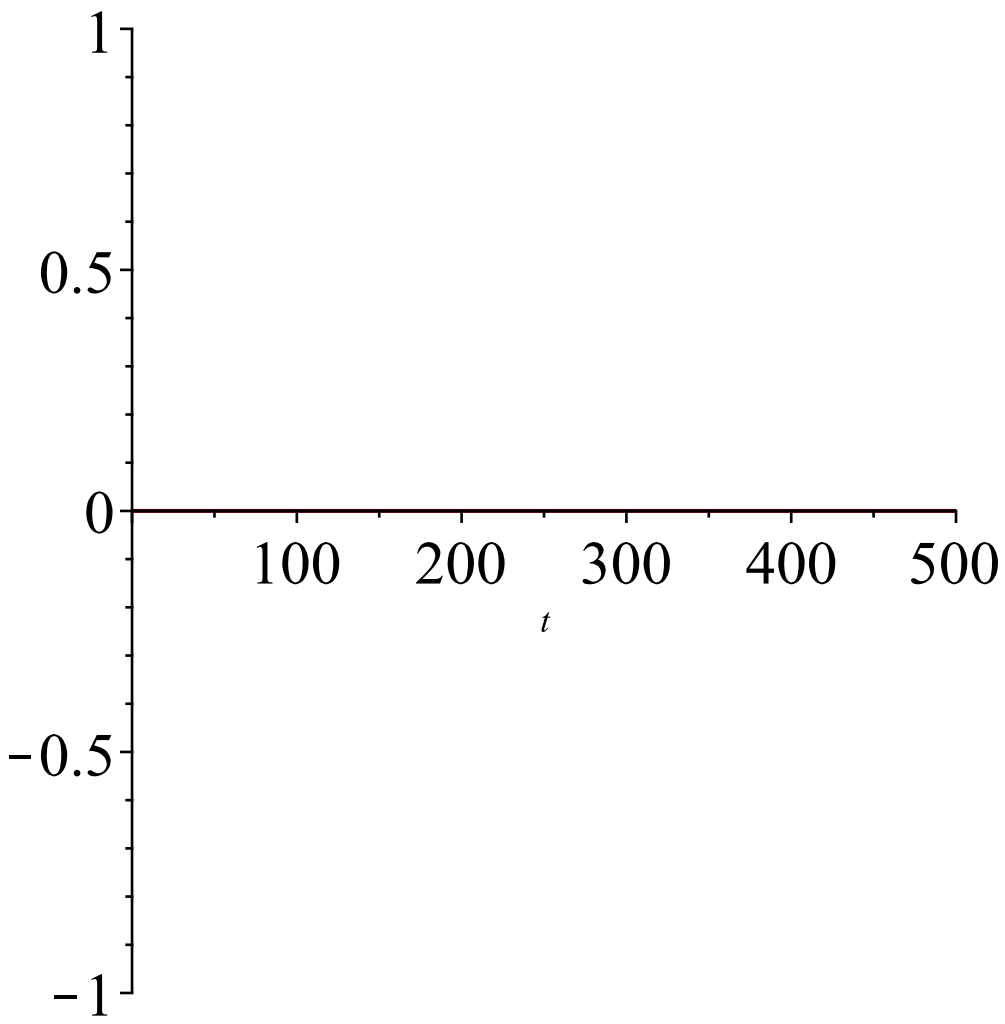
実習21.5

>

> $dsolve(\{diff(x(t),t,t) = -x(t) + \sin(0), x(0) = 0, D(x)(0) = 0\}, x(t))$

$$x(t) = 0 \tag{1}$$

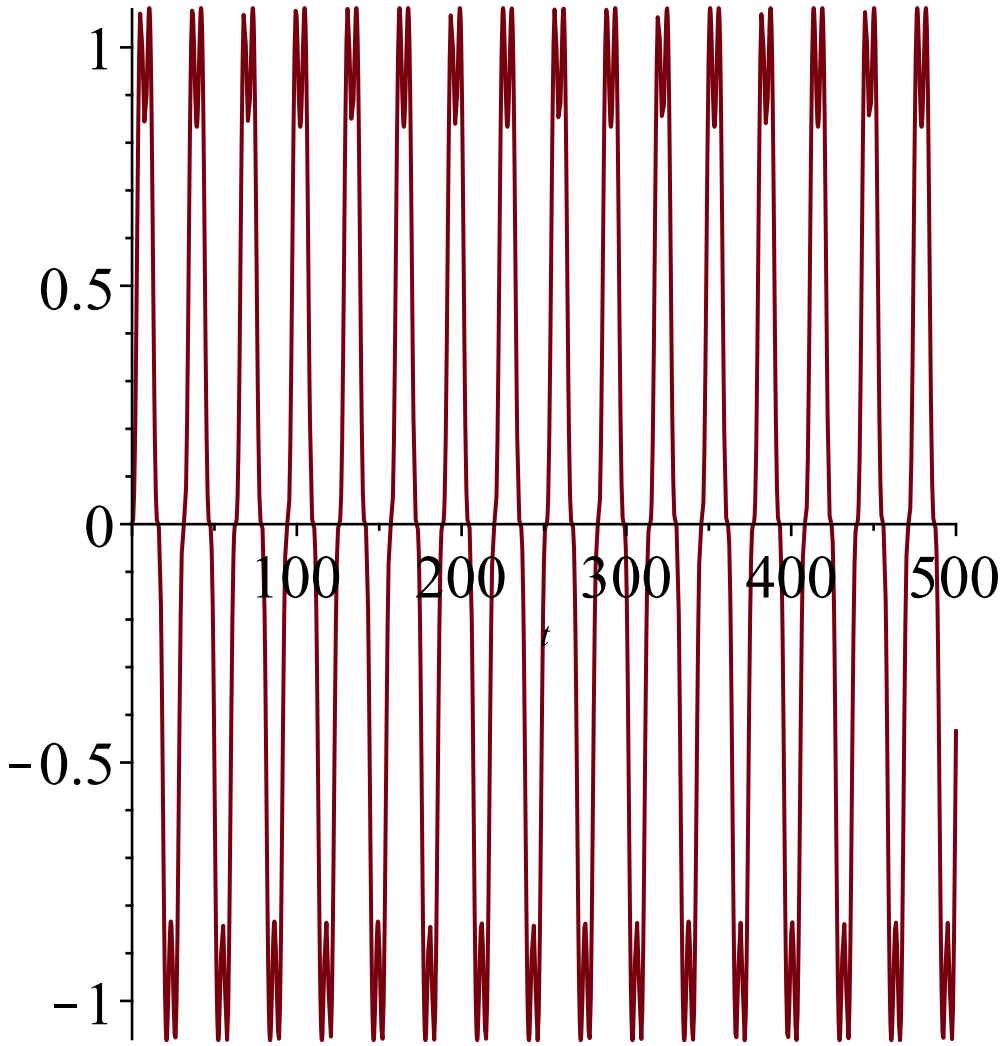
> $plot(rhs(\%), t = 0..500)$



> $dsolve(\{diff(x(t),t,t) = -x(t) + \sin(0.2\cdot t), x(0) = 0, D(x)(0) = 0\}, x(t))$

$$x(t) = -\frac{5\sin(t)}{24} + \frac{25\sin\left(\frac{t}{5}\right)}{24} \tag{2}$$

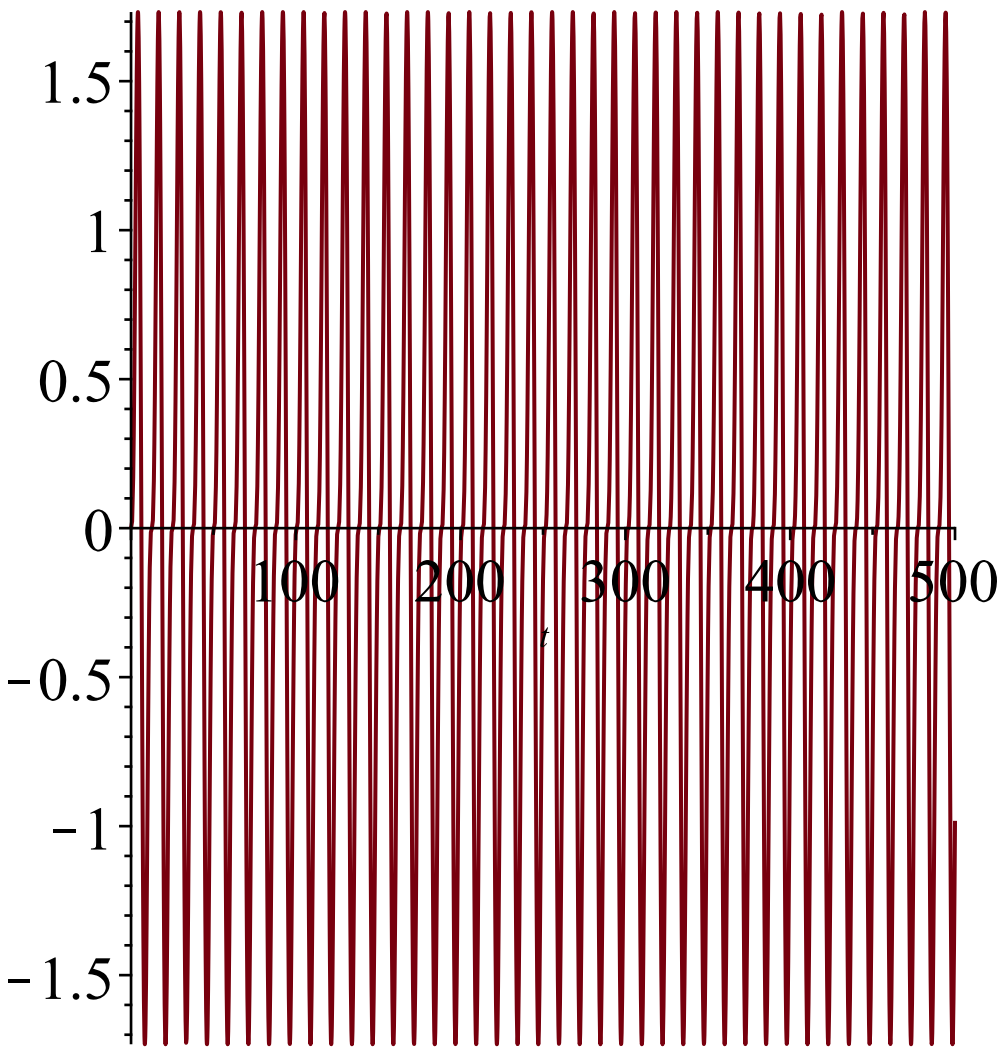
> $plot(rhs(\%), t = 0..500)$




```
> dsolve( {diff(x(t), t, t) =-x(t) + sin(0.5·t), x(0) = 0, D(x)(0) = 0}, x(t) )
```

$$x(t) = -\frac{2\sin(t)}{3} + \frac{4\sin\left(\frac{t}{2}\right)}{3} \tag{3}$$

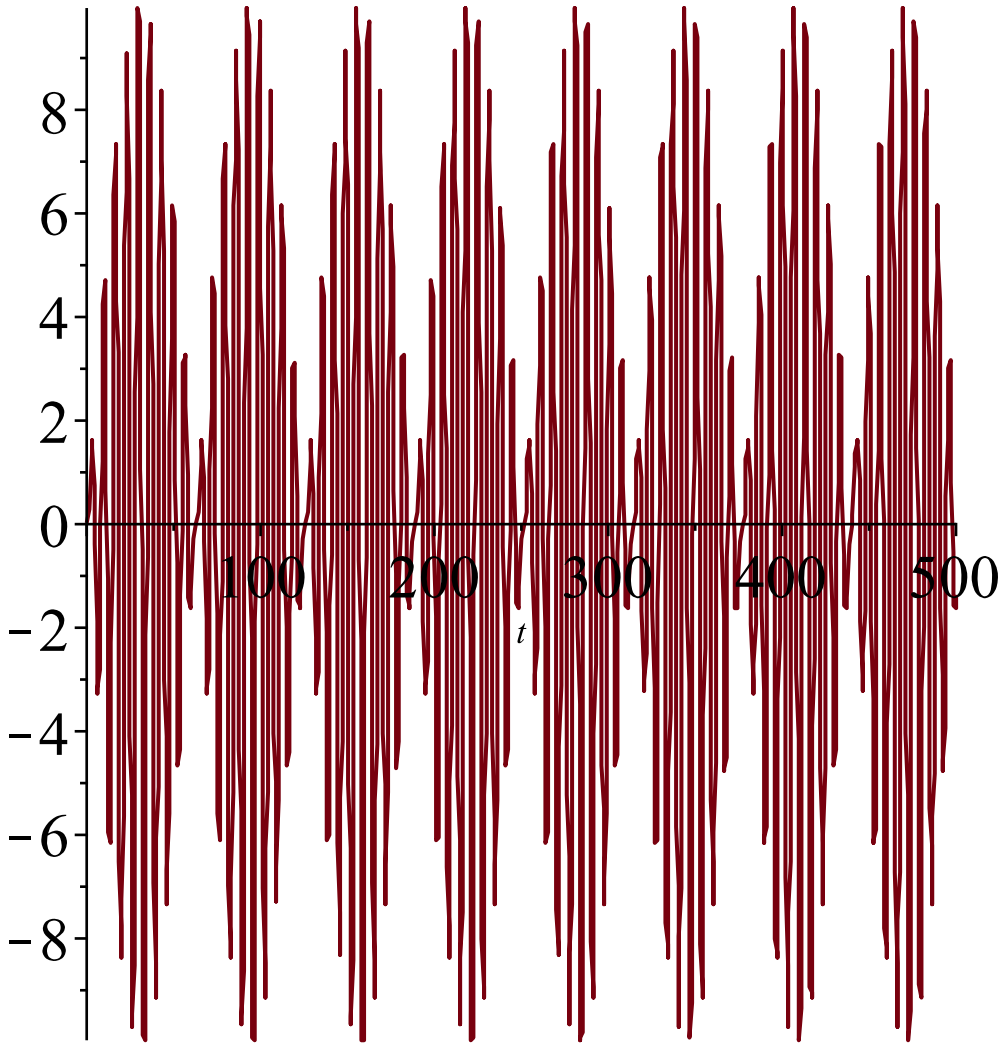
```
> plot(rhs(%), t = 0..500)
```




```
> dsolve({diff(x(t),t,t)=-x(t)+sin(0.9*t),x(0)=0,D(x)(0)=0},x(t))
```

$$x(t) = -\frac{90\sin(t)}{19} + \frac{100\sin\left(\frac{9t}{10}\right)}{19} \tag{4}$$

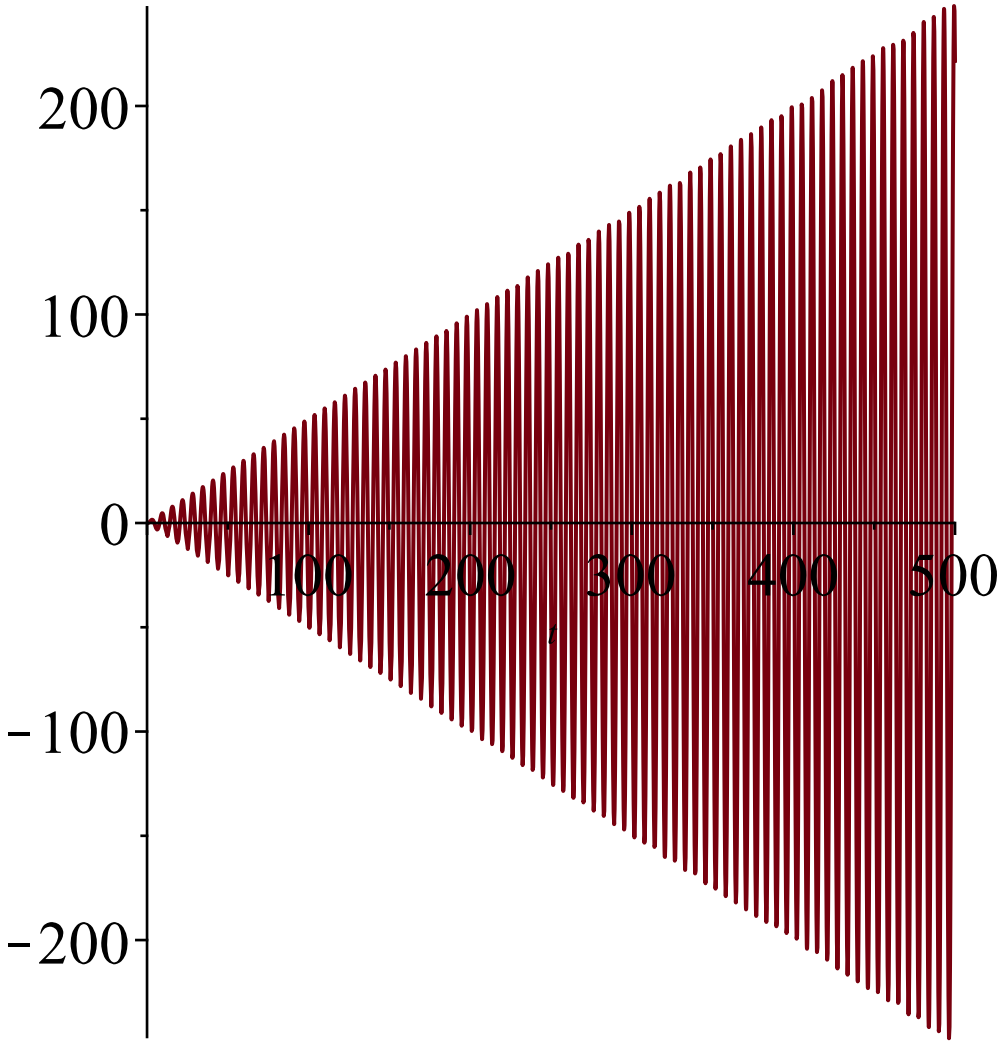
```
> plot(rhs(%),t=0..500)
```




```
> dsolve({diff(x(t),t,t)=-x(t)+sin(t),x(0)=0,D(x)(0)=0},x(t))
```

$$x(t) = \frac{\sin(t)}{2} - \frac{\cos(t)\,t}{2} \tag{5}$$

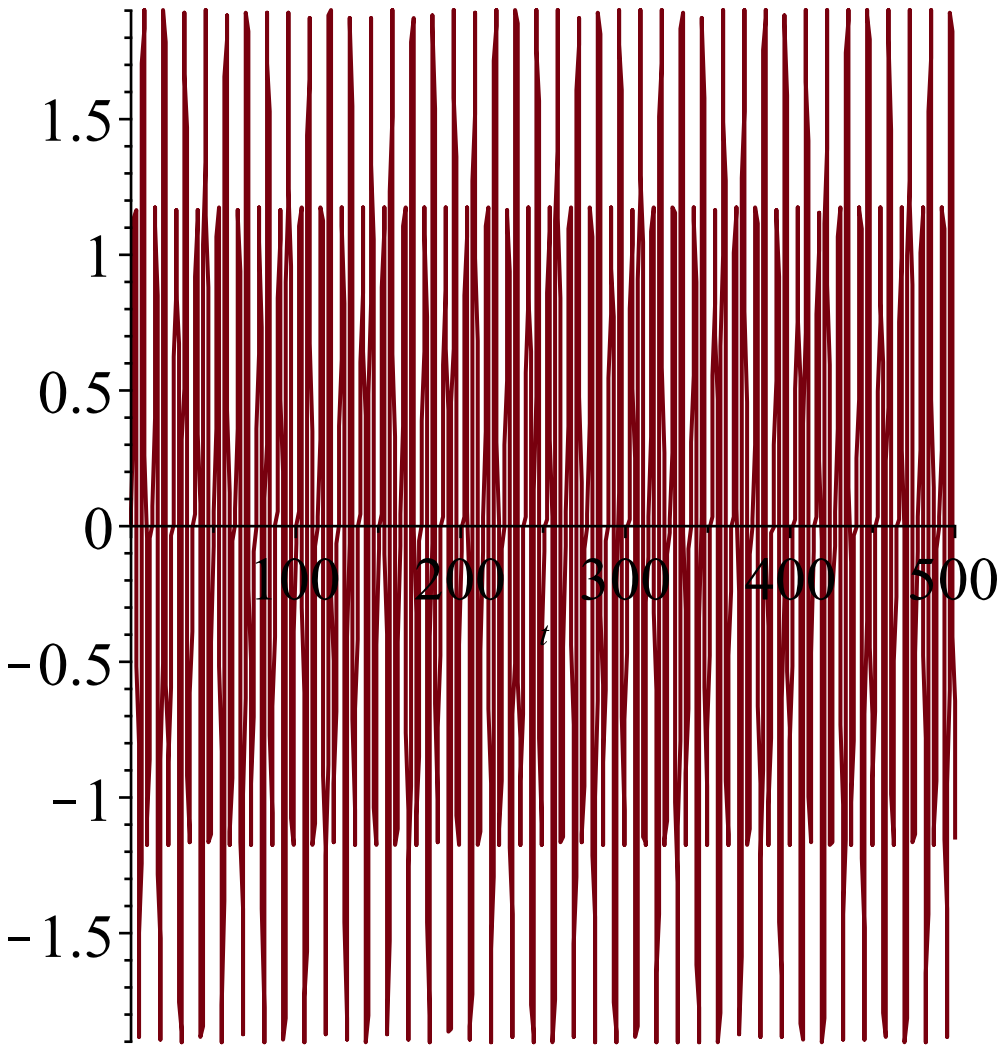
```
> plot(rhs(%),t=0..500)
```




```
> dsolve({diff(x(t),t,t) = -x(t) + sin(1.5*t), x(0) = 0, D(x)(0) = 0}, x(t))
```

$$x(t) = \frac{6\sin(t)}{5} - \frac{4\sin\left(\frac{3t}{2}\right)}{5} \tag{6}$$

```
> plot(rhs(%), t = 0..500)
```


1.5
1
0.5
0
-0.5
-1
-1.5
100
200
300
400
500
t

>

>