

## Facit V

108:

```
> dsolve(diff(x(t),t)+x(t)*tan(t)=0,x(t));
```

$$x(t) = \_C1 \cos(t)$$

109:

```
> dsolve(diff(x(t),t)+x(t)=t,x(t));
```

$$x(t) = -1 + t + e^{(-t)} \_C1$$

110:

```
> dsolve({diff(x(t),t)+1/t*x(t)=-2*t^2,x(1)=-1},x(t));
```

$$x(t) = \frac{-\frac{t^4}{2} - \frac{1}{2}}{t}$$

```
> simplify(%);
```

$$x(t) = -\frac{t^4 + 1}{2t}$$

111:

```
> dsolve(t*diff(x(t),t)-2*x(t)=t^5,x(t));
```

$$x(t) = \left(\frac{t^3}{3} + \_C1\right) t^2$$

112:

```
> dsolve(diff(x(t),t)-2/t*x(t)=2*t+5,x(t));
```

$$x(t) = \left(2 \ln(t) - \frac{5}{t} + \_C1\right) t^2$$

113:

```
> dsolve(diff(x(t),t)+t^2*x(t)=t^3+1,x(t));
```

$$x(t) = t + e^{\left(-\frac{t^3}{3}\right)} \_C1$$

114:

```
> dsolve(diff(x(t),t)+x(t)=cos(t),x(t));
```

$$x(t) = \frac{1}{2} \cos(t) + \frac{1}{2} \sin(t) + e^{(-t)} \_C1$$

```
>
```