Using Maple to obtain direction fields and solution curve plots to systems of equations:

```
> de1:=diff(x1(t),t)=x1(t)+x2(t);
```

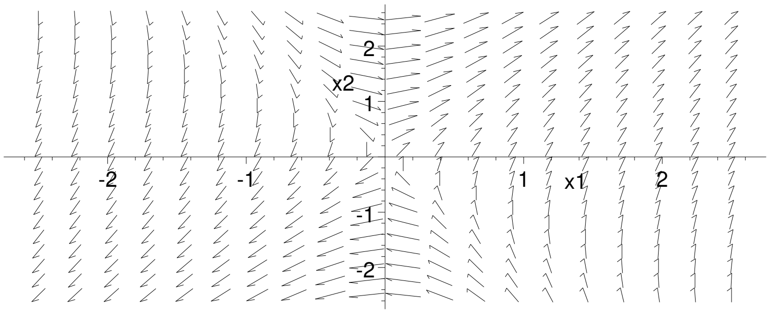
$$de1 := \frac{\partial}{\partial t}\,\mathrm{x1}(t) = \mathrm{x1}(t) + \mathrm{x2}(t)$$

```
> de2:=diff(x2(t),t)=4*x1(t)+x1(t);
```

$$de2 := \frac{\partial}{\partial t}\,\mathrm{x2}(t) = 5\,\mathrm{x1}(t)$$

EXAMPLE: DIRECTION FIELD

```
> with(DEtools):
> DEplot([de1,de2],[x1,x2],t=0..2,x1=-2.5..2.5,x2=-2.5..2.5,color=bl
  ack);
```

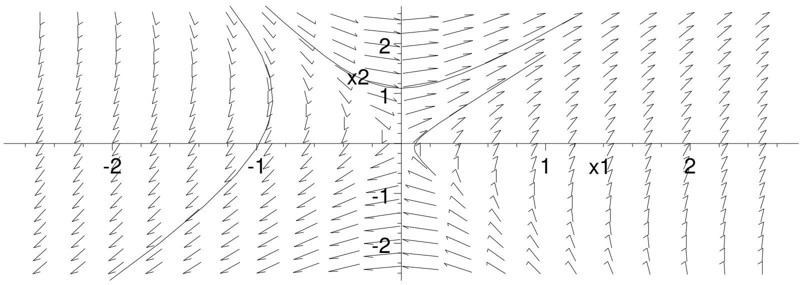


EXAMPLE: DIRECTION FIELD, with Solution Curves

```
> initconds:=[[x1(0)=0,x2(0)=1.1],[x1(0)=-1,x2(0)=-0.1],[x1(0)=0.1,x
  2(0)=0]];
```

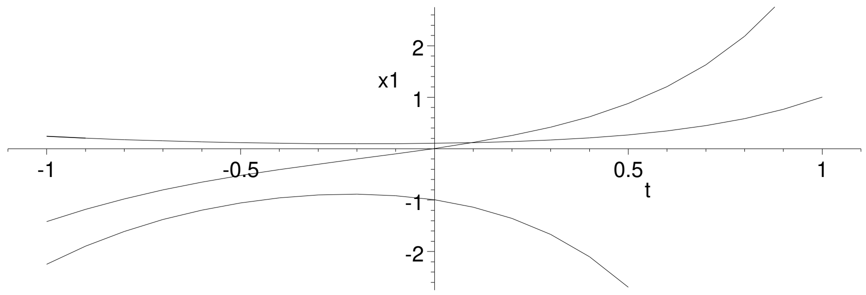
$$initconds := [[\mathrm{x1}(0) = 0, \mathrm{x2}(0) = 1.1], [\mathrm{x1}(0) = -1, \mathrm{x2}(0) = -.1], [\mathrm{x1}(0) = .1, \mathrm{x2}(0) = 0]]$$

```
> DEplot([de1,de2],[x1,x2],t=-1..1,x1=-2.5..2.5,x2=-2.5..2.5,initcon
  ds,color=black,linecolor=black);
```



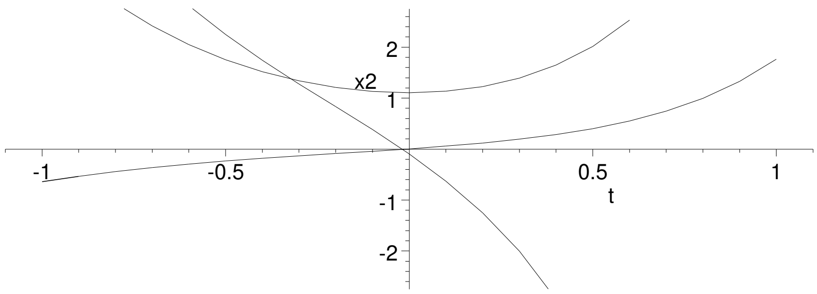
EXAMPLE: Several curves in (t, x1(t)) coordinates

```
> DEplot([de1,de2],[x1,x2],t=-1..1,x1=-2.5..2.5,x2=-2.5..2.5,initcon
  ds,color=black,linecolor=black,scene=[t,x1]);
```



EXAMPLE: Several curves in (t, x2(t)) coordinates:

```
> DEplot([de1,de2],[x1,x2],t=-1..1,x1=-2.5..2.5,x2=-2.5..2.5,initcon
  ds,color=black,linecolor=black,scene=[t,x2]);
```




```
>
```