```
> with(plots):
> deq:= diff(y(x),x)+y(x)*ln(x)=x-1;
```

$$deq := \frac{d}{dx} y(x) + y(x) \ln(x) = x - 1 \tag{1}$$

```
> aw1 := {deq,y(1/3)=2};
```

$$aw1 := \left\{ \frac{d}{dx} y(x) + y(x) \ln(x) = x - 1, y\left(\frac{1}{3} \right) = 2 \right\} \tag{2}$$

```
> aw2 := {deq,y(1/3)=1/4};
```

$$aw2 := \left\{ \frac{d}{dx} y(x) + y(x) \ln(x) = x - 1, y\left(\frac{1}{3} \right) = \frac{1}{4} \right\} \tag{3}$$

```
> soly1:=dsolve(aw1);
```

$$soly1 := y(x) = \left(\int_{\frac{1}{3}}^{x} \_z1^{-\_z1} e^{-\_z1} (\_z1 - 1) \, d\_z1 + \frac{2}{3} \frac{3^{2/3}}{e^{\frac{1}{3}}} \right) x^{-x} e^{x} \tag{4}$$

```
> soly2:=dsolve(aw2);
```

$$soly2 := y(x) = \left(\int_{\frac{1}{3}}^{x} \_z1^{-\_z1} e^{-\_z1} (\_z1 - 1) \, d\_z1 + \frac{1}{12} \frac{3^{2/3}}{e^{\frac{1}{3}}} \right) x^{-x} e^{x} \tag{5}$$

```
> y1:=rhs(soly1);
```

$$y1 := \left(\int_{\frac{1}{3}}^{x} \_z1^{-\_z1} e^{-\_z1} (\_z1 - 1) \, d\_z1 + \frac{2}{3} \frac{3^{2/3}}{e^{\frac{1}{3}}} \right) x^{-x} e^{x} \tag{6}$$

```
> y2:=rhs(soly2);
```

$$y2 := \left(\int_{\frac{1}{3}}^{x} \_z1^{-\_z1} e^{-\_z1} (\_z1 - 1) \, d\_z1 + \frac{1}{12} \frac{3^{2/3}}{e^{\frac{1}{3}}} \right) x^{-x} e^{x} \tag{7}$$

```
> g1:=plot([y1,y2],x=1/3..4);
```

$$g1 := PLOT(\ldots) \tag{8}$$

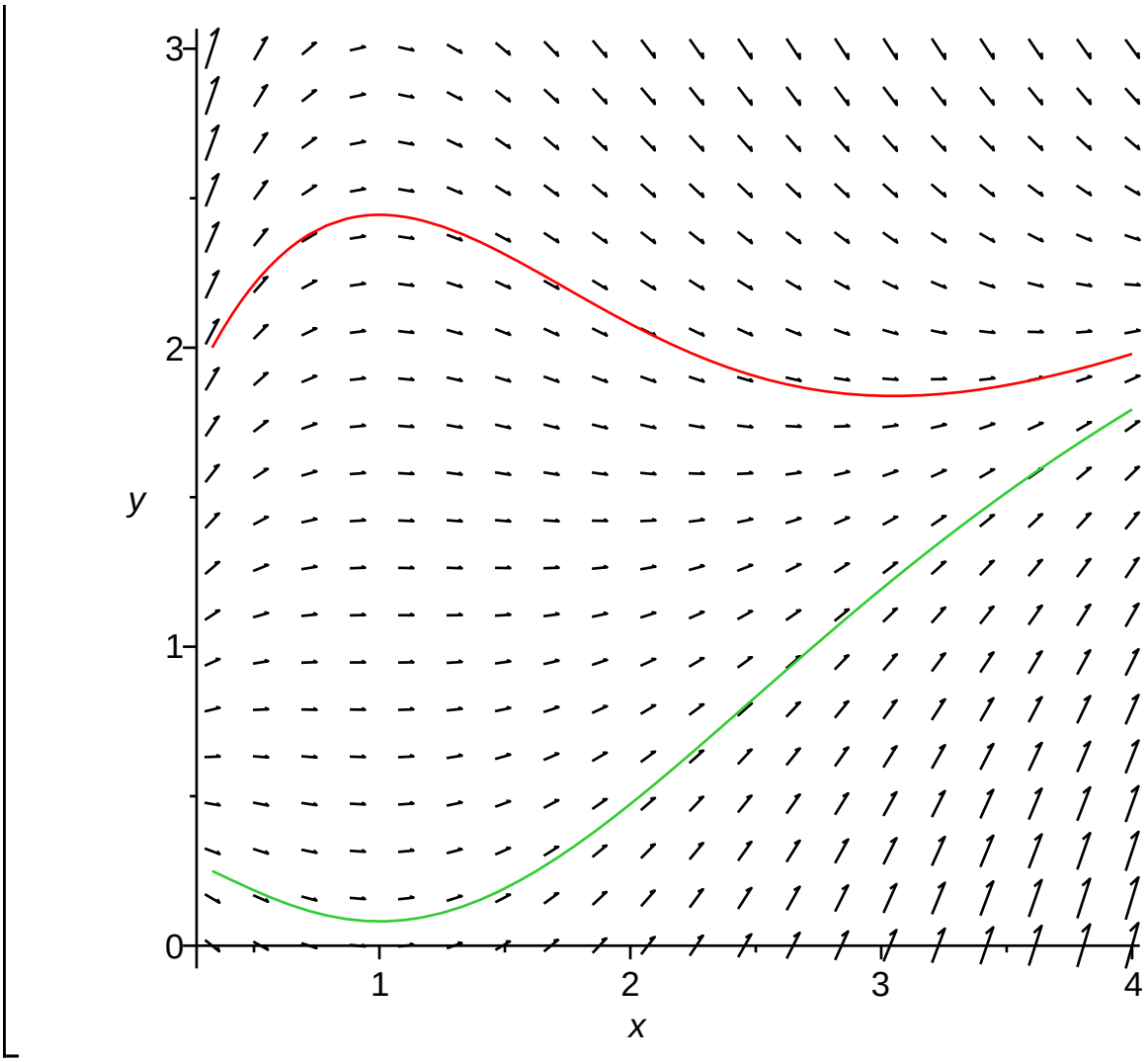
```
> v:=[1,-y*ln(x)+x-1];
```

$$v := [1, -y \ln(x) + x - 1] \tag{9}$$

```
> g2:=fieldplot(v,x=1/3..4,y=0..3);
```

$$g2 := PLOT(\ldots) \tag{10}$$

```
> display({g1,g2});
```


3
2
1
0
y
1
2
3
4
x