Plots for Section 9.2. The example from class (actually problem 8), and 5, 6, 7, and 9 on pg. 511

```
> with(DEtools): with(plots):
> SysFromClass:=[diff(x(t),t)=x(t)-(x(t))^2-x(t)*y(t),diff(y(t),t)=(
  1/2)*y(t)-(1/4)*(y(t))^2-(3/4)*x(t)*y(t)];
```

$$SysFromClass := \left[\frac{\partial}{\partial t}\mathrm{x}(t) = \mathrm{x}(t) - \mathrm{x}(t)^2 - \mathrm{x}(t)\,\mathrm{y}(t), \frac{\partial}{\partial t}\mathrm{y}(t) = \frac{1}{2}\mathrm{y}(t) - \frac{1}{4}\mathrm{y}(t)^2 - \frac{3}{4}\mathrm{x}(t)\,\mathrm{y}(t)\right]$$

```
> SysProb5:=[diff(x(t),t)=(2+x(t))*(y(t)-x(t)),diff(y(t),t)=(4-x(t))
  *(y(t)+x(t))];
```

$$SysProb5 := \left[\frac{\partial}{\partial t}\mathrm{x}(t) = (2 + \mathrm{x}(t))\,(\mathrm{y}(t) - \mathrm{x}(t)), \frac{\partial}{\partial t}\mathrm{y}(t) = (4 - \mathrm{x}(t))\,(\mathrm{y}(t) + \mathrm{x}(t))\right]$$

```
> SysProb6:=[diff(x(t),t)=x(t)-(x(t))^2-x(t)*y(t),diff(y(t),t)=3*y(t
  )-x(t)*y(t)-2*(y(t))^2];
```

$$SysProb6 := \left[\frac{\partial}{\partial t}\mathrm{x}(t) = \mathrm{x}(t) - \mathrm{x}(t)^2 - \mathrm{x}(t)\,\mathrm{y}(t), \frac{\partial}{\partial t}\mathrm{y}(t) = 3\,\mathrm{y}(t) - \mathrm{x}(t)\,\mathrm{y}(t) - 2\,\mathrm{y}(t)^2\right]$$

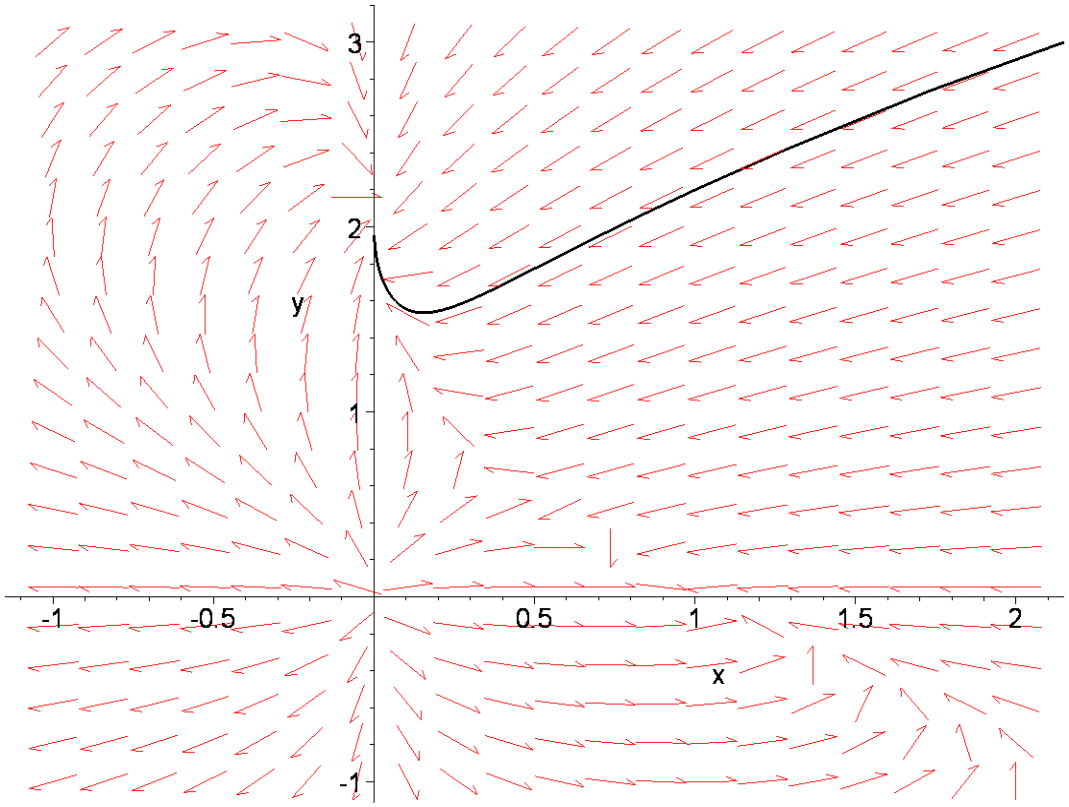
```
> SysProb7:=[diff(x(t),t)=1-y(t),diff(y(t),t)=(x(t))^2-(y(t))^2];
```

$$SysProb7 := \left[\frac{\partial}{\partial t}\mathrm{x}(t) = 1 - \mathrm{y}(t), \frac{\partial}{\partial t}\mathrm{y}(t) = \mathrm{x}(t)^2 - \mathrm{y}(t)^2\right]$$

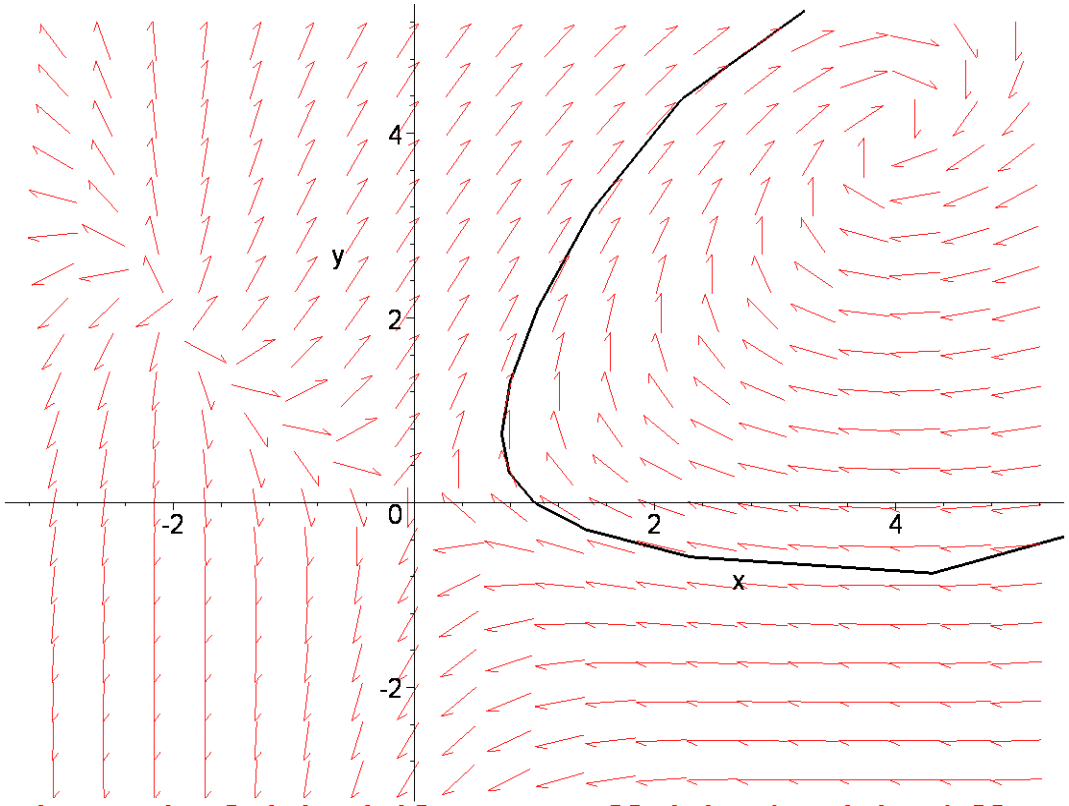
```
> SysProb9:=[diff(x(t),t)=-(x(t)-y(t))*(1-x(t)-y(t)),diff(y(t),t)=x(
  t)(2+y(t))];
```

$$SysProb9 := \left[\frac{\partial}{\partial t}\mathrm{x}(t) = -(\mathrm{x}(t) - \mathrm{y}(t))\,(1 - \mathrm{x}(t) - \mathrm{y}(t)), \frac{\partial}{\partial t}\mathrm{y}(t) = \mathrm{x}(t)(2 + \mathrm{y}(t))\right]$$

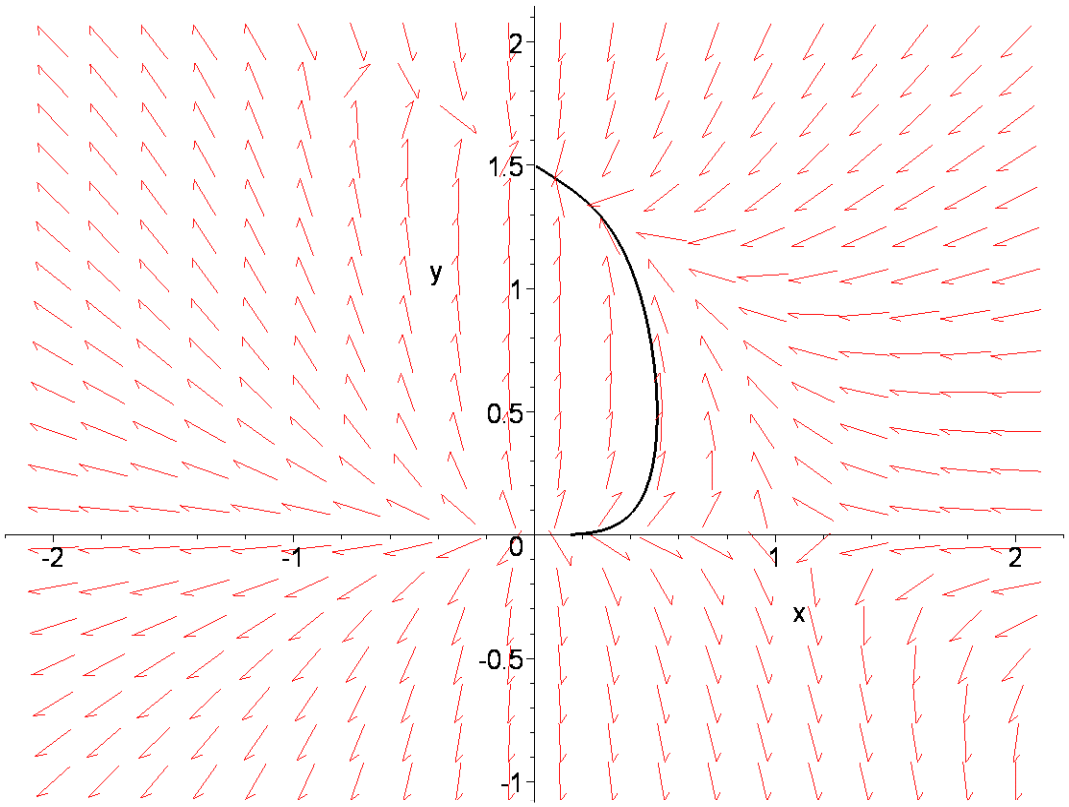
```
> DEplot(SysFromClass,[x(t),y(t)],t=-2..9,[[x(0)=1,y(0)=2.2]],x=-1..
  2,y=-1..3,stepsize=0.1,linecolor=black);
```



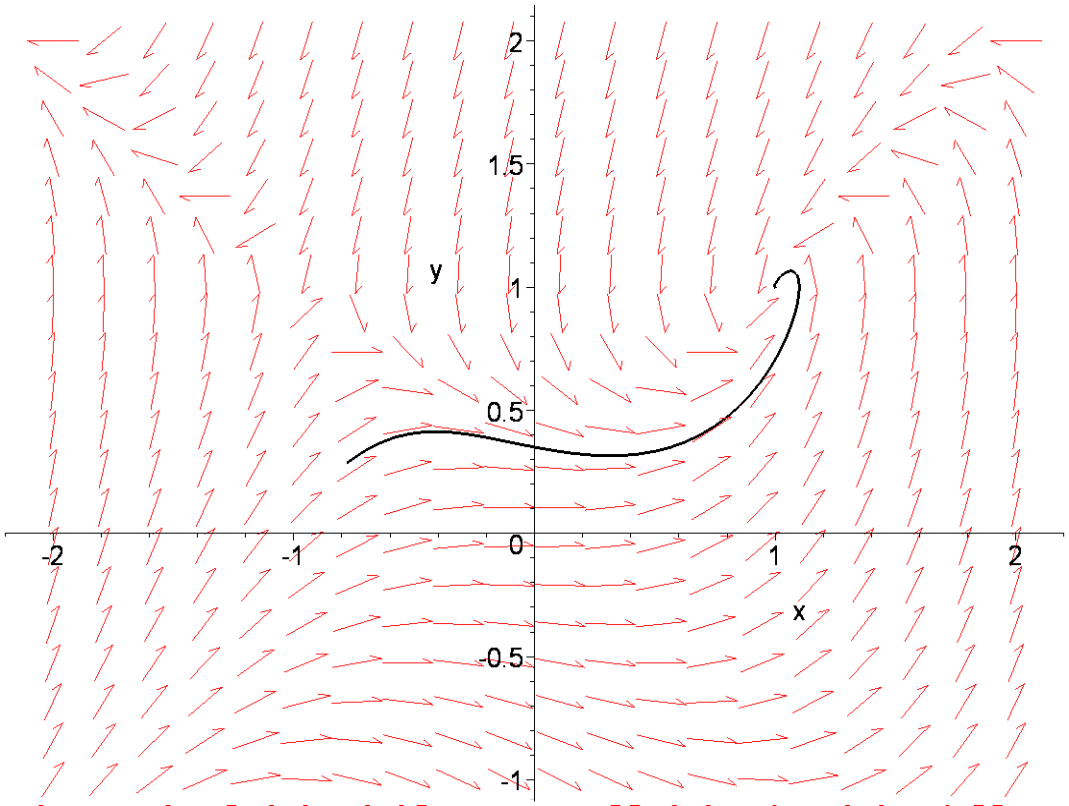

```
> DEplot(SysProb5,[x(t),y(t)],t=-2..9,[[x(0)=1,y(0)=0]],x=-3..5,y=-3
  ..5,stepsize=0.1,linecolor=black);
```



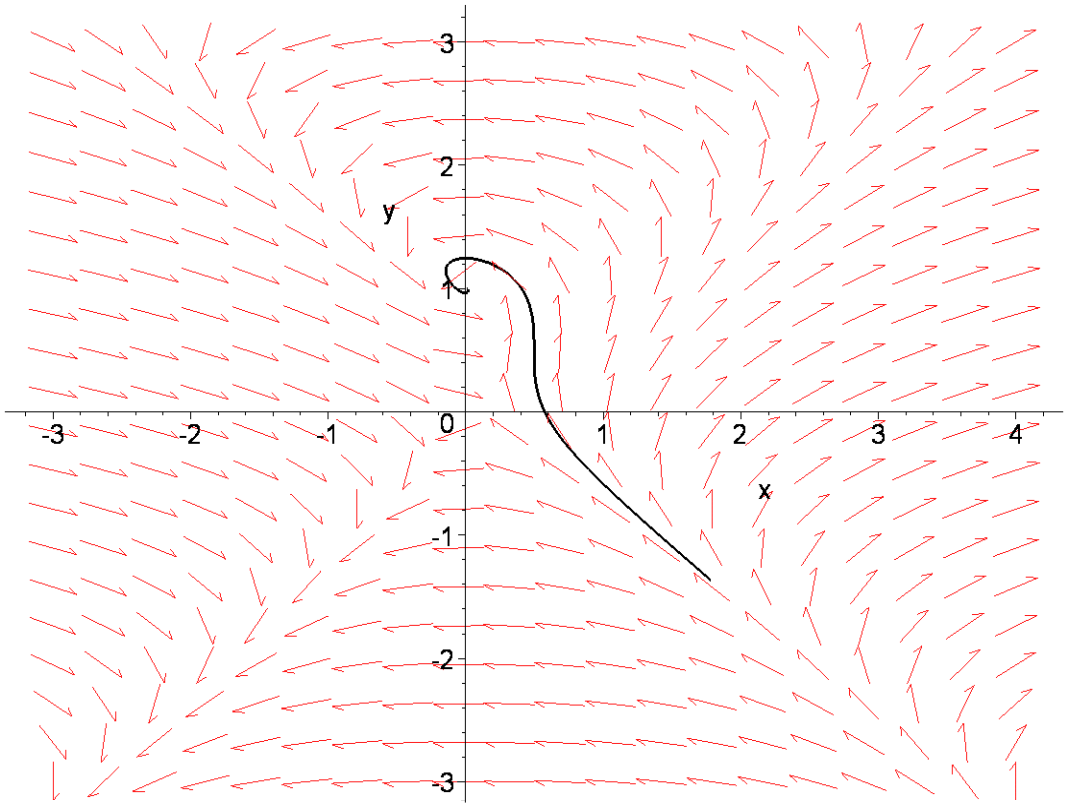

```
> DEplot(SysProb6,[x(t),y(t)],t=-2..9,[[x(0)=1/2,y(0)=1/3]],x=-2..2,
  y=-1..2,stepsize=0.1,linecolor=black);
```




```
> DEplot(SysProb7,[x(t),y(t)],t=-2..9,[[x(0)=1/2,y(0)=1/3]],x=-2..2,
  y=-1..2,stepsize=0.1,linecolor=black);
```




```
> DEplot(SysProb9,[x(t),y(t)],t=-2..9,[[x(0)=1/2,y(0)=1/3]],x=-3..4,
  y=-3..3,stepsize=0.1,linecolor=black);
```


3
2
y
1
0
-3
-2
-1
1
2
3
4
x
-1
-2
-3

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