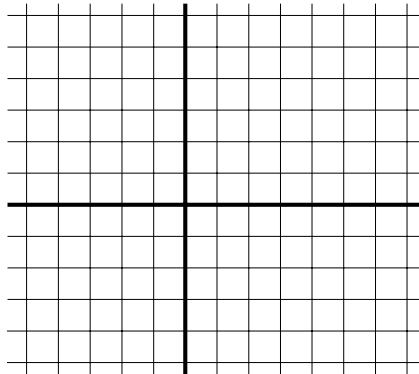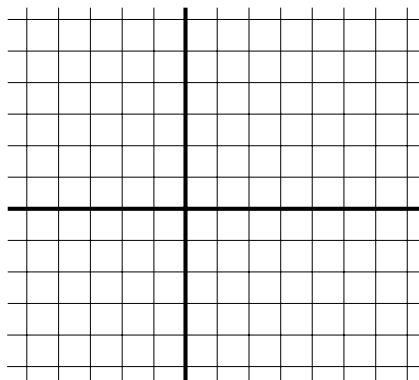8.1 supplemental HW

1.) For each of the following differential equations (i) draw its direction field; (ii) sketch the solution of the direction field that passes through the point (-2, 1); (iii) state the general solution to the differential equation.
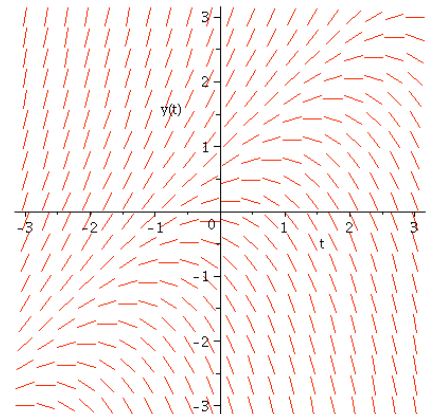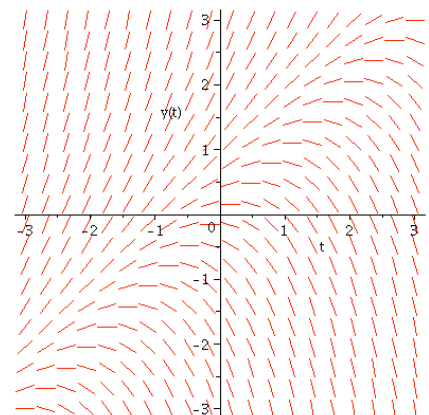
a.) $y' = 0$

b.) $y' = -1$

2.) Circle a solution to the differential equation whose direction field is given below:

A) $y = t^2$

B) $y = \frac{1}{2}t + 1$

C) $y = e^t$

D) $y = t + 1$

E) $y = -2e^t$

F) $y = 2t + 1$

G) $y = ln(t)$

H) $y = 0$

I) $y = sin(t)$

J) $y = cos(t)$

3.) Circle the differential equation whose direction field is given below:

A) $y' = t^2$

B) $y' = \frac{1}{2}t + 1$

C) $y' = e^t$

D) $y' = t + 1$

E) $y' = -2e^t$

F) $y' = y - t$

G) $y' = ln(t)$

H) $y' = 0$

I) $y' = sin(t)$

J) $y' = cos(t)$

4.) Circle the general solution to the differential equation whose direction field is given below:

A) $y = t + C$ **B)** $y = t^2 + C$

C) $y = e^t + C$ **D)** $y = Ce^t + t + 1$

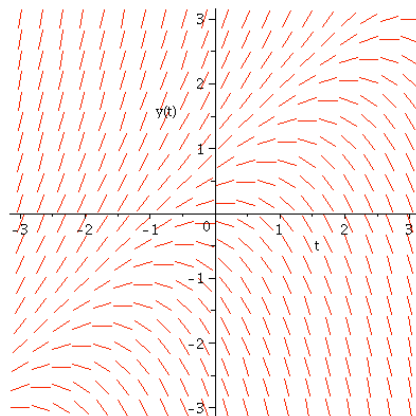**E)** $y = Ce^t$ **F)** $y = e^t + t + C$

G) $y = ln(t) + C$ **H)** $y = C$

I) $y = sin(t) + C$ **J)** $y = cos(t) + C$

5.) Which of the following could be the general solution to the differential equation whose direction field is given below:

A) $y = t + C$ **B)** $y = t^2 + C$

C) $y = e^t + C$ **D)** $y = \frac{(t-1)^3}{3} + C$
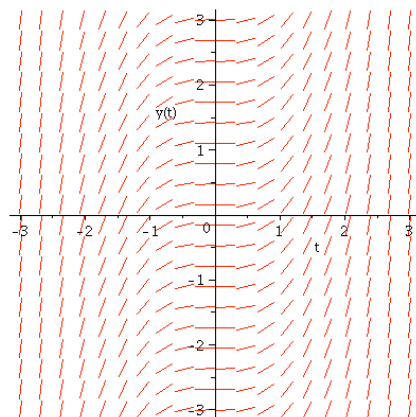
E) $y = Ce^t$ **F)** $y = \frac{t^3}{3} + C$

G) $y = ln(t) + C$ **H)** $y = C$

I) $y = \frac{Ct^3}{3}$ **J)** $y = \frac{C(t-1)^3}{3}$

6.) Circle the differential equation whose direction field is given below:

A) $y' = t^2$ **B)** $y' = y + 3$

C) $y' = e^t$ **D)** $y' = t + 1$

E) $y' = t - y$ **F)** $y' = y - t$

G) $y' = (1 + y)(1 - y)$ **H)** $y' = y(1 + y)$

I) $y' = t(1 - t)$ **J)** $y' = y(1 - y)$