

1. FIND  $y'$  for  $(x+1)^2 + (y-2)^2 = 25$

2. FIND  $y$  FOR  $y' = \frac{-(x-2)}{(y+1)}$ . What does  $C$  mean?

3. Newton's Law:  $T = 100 - 80e^{-0.01t}$

$T$  is in  $^{\circ}C$ .  $t$  is in minutes.

a, Cooling or heating?

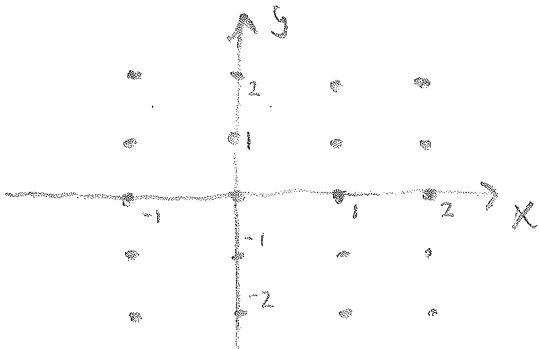
b, What is initial temperature?

c, What is final temperature?

d, when is  $T = 40^{\circ}C$ ?

4. a, Draw the slope/direction field.

$$\frac{dy}{dx} = y(1-x)$$



b, DRAW THE SOLUTION FOR  $y(0) = 1$ .

c, SOLVE THE EQUATION ALGEBRAICALLY.

5. Find the average value

over  $[0, \pi/2]$  =

a,  $f(x) = \sin(x)$

b,  $g(x) = \sin(x) + 1$