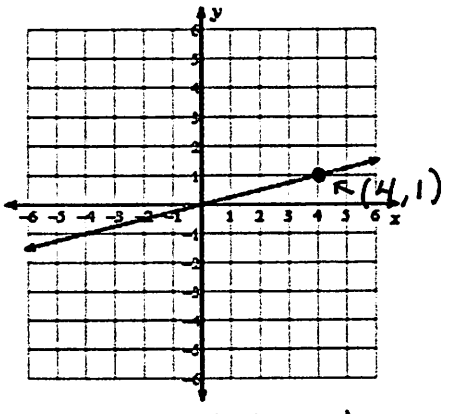
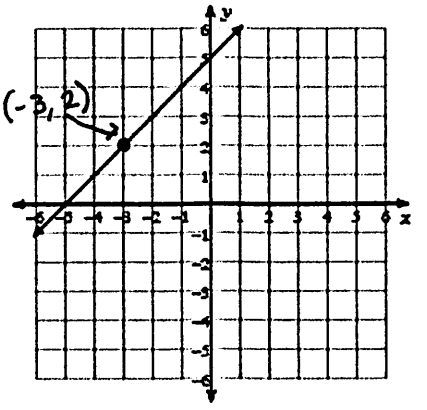
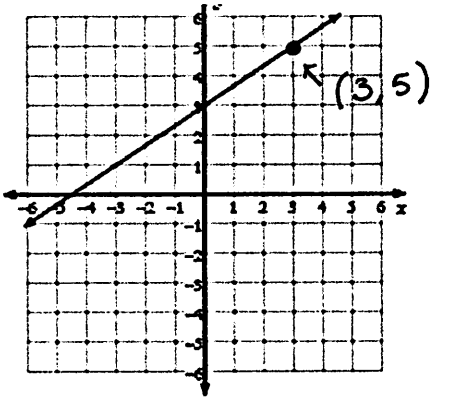
Algebra 1 Name Key

1) Write the equations for the graphs below in point-slope form: $y - y_1 = m(x - x_1)$



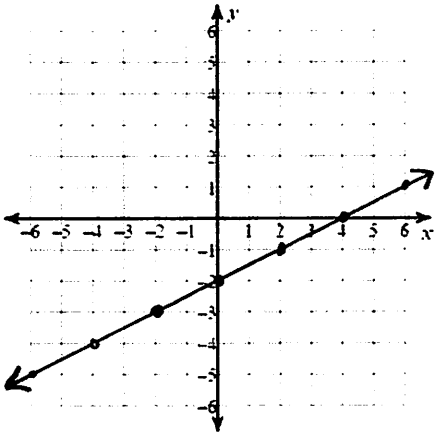




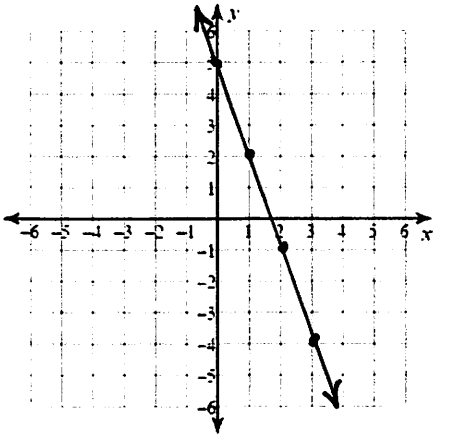
Answers: $y-1=\frac{1}{4}(x-4)$ $y-2=1(x+3)$ $y-5=\frac{2}{3}(x-3)$

2) Graph the following linear equations.

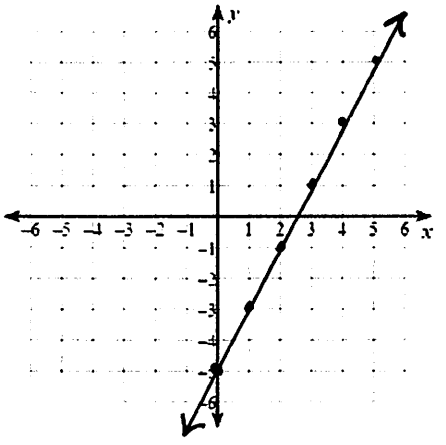
a) $y+3=\frac{1}{2}(x+2)$ pt: (-2,-3) slope: 1/2



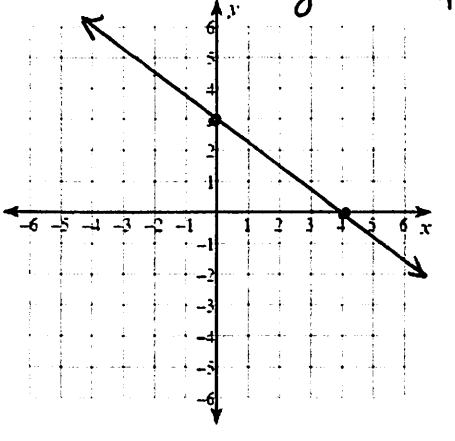
b) $y-2=-3(x-1)$ pt: (1,2) slope: -3



c) $2x-y=5$ convert to slope int: $y=2x-5$



d) $3x+4y=12$ x-int = $\frac{12}{3}$ → (4,0) y-int = $\frac{12}{4}$ → (0,3)



3) Write the equation of the line in point-slope form that goes through the two points.

a) (3,–5) and (–1,3)

$\text{Slope} = \frac{y_2 - y_1}{x_2 - x_1}$

$\text{Slope} = \frac{3-(-5)}{-1-3} = \frac{8}{-4} = -2$

eqtn: $y+5 = -2(x-3)$ OR $y-3 = -2(x+1)$

b) (10,5) and (–2,14)

$\text{Slope} = \frac{14-5}{-2-10} = \frac{9}{-12} = -3/4$

eqtn: $y-5 = -3/4(x-10)$

OR

$y-14 = -3/4(x+2)$

4) Find the x and y-intercepts for the following linear equations.

a) $5x+4y=20$

x-int: (4, 0)

y-int: (0, 5)

b) $-x+3y=18$

x-int: (-18, 0)

y-int: (0, 6)

Hint:

From standard form $Ax + By = C$

x-int: C/A

y-int: B/A

From any form

x-int: sub $\emptyset$ for y

$(x, 0)$

y-int: sub $\emptyset$ for x

$(0, y)$

c) $y-2=\frac{3}{4}(x-9)$

x-int: $\emptyset - 2 = \frac{3}{4}(x-9)$

$-2 = \frac{3}{4}(x-9)$

$\frac{-8}{3} = x-9$

$x = 19/3$

x-int: $(19/3, \emptyset)$

y-int: $y-2 = \frac{3}{4}(\emptyset-9)$

$y-2 = \frac{-27}{4}$

$y = -19/4$

y-int: $(0, -19/4)$

d) $y+1=-3(x+4)$

x-int: $\emptyset+1 = -3(x+4)$

$1 = -3(x+4)$

$-3 = x+4$

$x = -7$

x-int: $(-7, 0)$

y-int: $y+1 = -3(\emptyset+4)$

$y+1 = -3(4)$

$y+1 = -12$

$y = -13$

y-int: $(0, -13)$