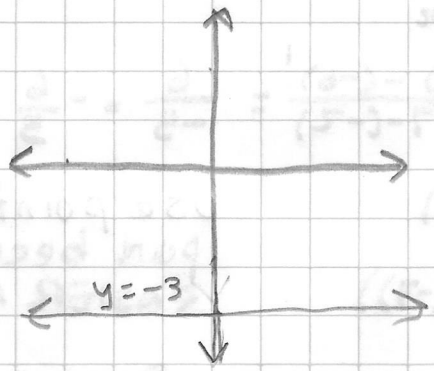
Test 01 Review Solutions

① Graph $y+3=0$

$y+3=0$

$y=-3$



② $f(x)=x^2+5x+3$

a) $f(0)=(0)^2+5(0)+3$
$=3$

b) $f(1)=(1)^2+5(1)+3$
$=1+5+3=9$

c) $f(-1)=(-1)^2+5(-1)+3$
$=1-5+3$
$=-1$

d) $f(3)=(3)^2+5(3)+3$
$=9+15+3$
$=27$

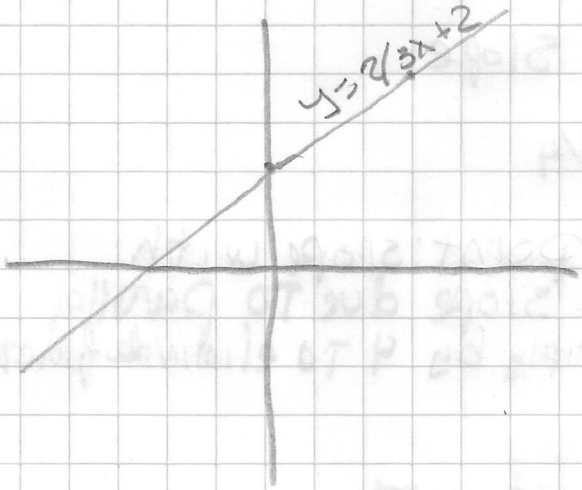
③ $y=\$19.63x+\$250$

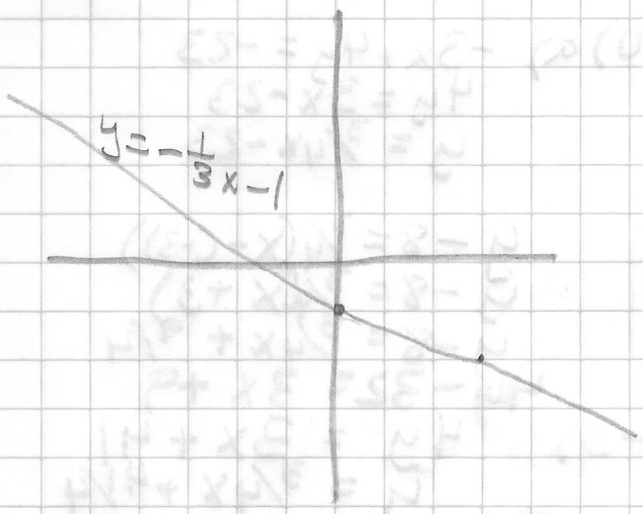
④

Note: Any line through origin with a negative slope is ok

⑤ a) no b) no c) yes d) yes

⑥





7) $(-2,-6)$ $(-7,0)$ Find slope first

$x_1\ y_1$ $x_2\ y_2$

$m = \frac{y_2-y_1}{x_2-x_1} = \frac{0-(-6)}{-7-(-2)} = \frac{6}{-5} = -\frac{6}{5}$

$y-y_2 = m(x-x_2)$ use point slope. Use second point because $y_2=0$ so its easier math

$y-0 = -\frac{6}{5}(x-(-7))$

$y = -\frac{6}{5}(x+7)$ Point slope

$y = -\frac{6}{5}x - \frac{42}{5}$ slope intercept

$5y = -6x - 42$

$6x+5y = -42$ STANDARD

8) $(1,2)$ slope -2 use point slope

$x_1\ y_1$

$y-y_1 = m(x-x_1)$

$y-2 = -2(x-1)$ point slope

$y-2 = -2x+2$

$y = -2x+4$ slope intercept

$2x+y = 4$ STANDARD

9) $(9,10), (9,-4)$ NOTE x doesn't change so you get

$x = 9$

10) a) $-3x+4y = -23$ Find slope

$4y = 3x-23$

$y = 3/4x - 23$ $m = 3/4$

$y-8 = 3/4(x-(-3))$ Use point slope with same slope due to parallel

$y-8 = 3/4(x+3)$ multiply by 4 to eliminate fraction

$y-8 = 3/4x + 9/4$

$4y-32 = 3x+9$

$4y = 3x+41$

$y = 3/4x + 41/4$ slope intercept

$-3x+4y = 41$ STANDARD

10b) Perpendicular

Use opposite reciprocal slope of $m = -4/3$

$y - 8 = -4/3(x - (-3))$ Use point slope

$y - 8 = -4/3(x + 3)$

$y - 8 = -4/3x - 4$

$y = -4/3x + 4$ slope intercept

$-4/3x + y = 4$

$-4x + 3y = 12$ STANDARD

10c) Horizontal has form $y = ?$

$y = 8$

10d) Vertical has form $x = ?$

$x = -3$

11) Relation $\{(-8,2), (-1,5), (-8,8), (4,7), (9,7)\}$

a) Domain - x coordinates

$\{-8, -1, 4, 9\}$

b) Range - y coordinates

$\{2, 5, 7, 8\}$

c) NOT a function (-8 repeats in $(-8,2)$ & $(-8,8)$)

12) yes it is a function

13) $-2x + 4y = 16$

x-intercept Let $y = 0$

$-2x + 4(0) = 16$

$-2x = 16$

$x = -8$

$(-8, 0)$

y-intercept Let $x = 0$

$-2(0) + 4y = 16$

$4y = 16$

$y = 4$

$(0, 4)$

14) $3x-6y=10$ $18x+9y=13$

Find their slopes

$3x-6y=10$

$-6y=-3x+10$

$y=\frac{-3}{-6}x-\frac{10}{6}$

$m=\frac{1}{2}$

$18x+9y=13$

$9y=-18x+13$

$y=-\frac{18}{9}x+\frac{13}{9}$

$m=\frac{-18}{9}=-2$

$(\frac{1}{2})\cdot(-2)=-1$ Perpendicular