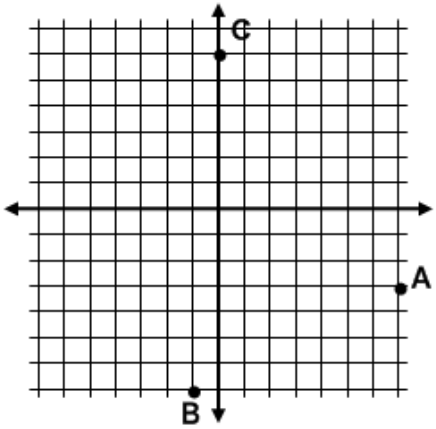
Name:_____ **Date:**_____ **Per:**_____

Chapter 4 Practice Test

Read each problem carefully and be sure to show ALL of your work. Make sure all numbers are written clearly and to circle each answer. Do your best!

1. Write the ordered pairs that are represented by the points in the coordinate plane below. State that quadrant that each ordered pair is in.



A: _(7, −3)__ Quadrant IV

B: __(−1, −7) Quadrant III____

C: ___(0, 6) No Quadrant or *y*-axis___

Graph the following equation <u>by making a table.</u>

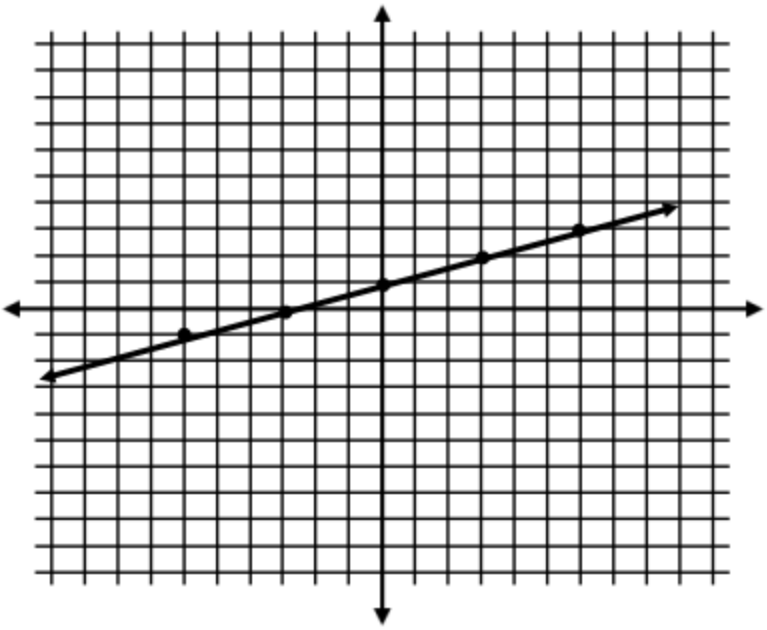
2. $6y - 2x = 6$ First isolate y

$+2x \quad +2x$

$\frac{6y}{6} = \frac{6 + 2x}{6}$

$y = 1 + \frac{1}{3}x$

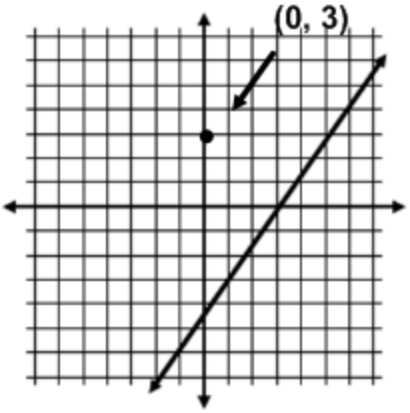
Since the coefficient of x is a fraction, Choose multiples of the denominator so you Don't end up with fraction answers.



x	y
−6	−1
−3	0
0	1
3	2
6	3

3. Is (0, 3) a solution to the equation of the line graphed? Explain why or why not.

No, because when you graph the point (0, 3) it does not fall on the line



4. You are going to a concert and can buy up to 6 tickets online. Tickets cost $40 each and there is a one-time processing fee of $15.

a. Write a function to represent the total cost where x is the number of tickets

$y = 40x + 15$

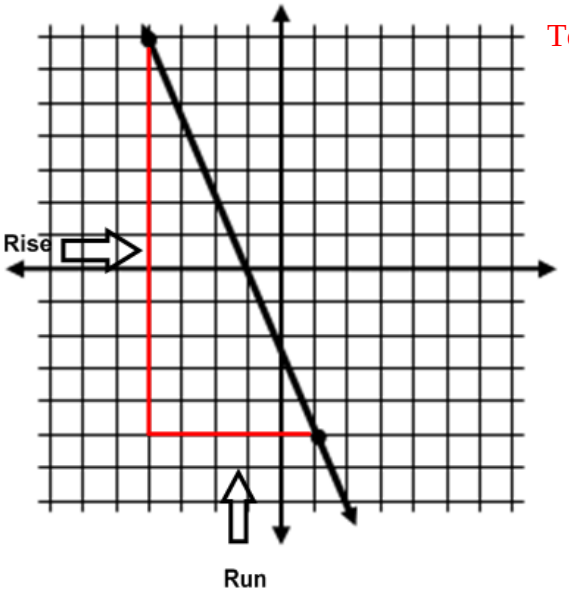
b. What is the domain of the function? What is the range of the function?

*Recall that domain is all possible input values, which for this problem is the total possible number of tickets you can buy. The range is all of the possible output values, which for this problem is all of the possible amounts of money you can spend.

Domain: __$0 \leq x \leq 6$_____ Range: __$15 \leq y \leq 255$_____

Find the slope of the line graphed.

5.



To find slope on a graph you need to use the formula:

$$\frac{\text{Rise}}{\text{Run}}$$

The rise is 12 and the run is 5 so the slope is

$-\frac{12}{5}$ ***don't forget that it is negative because the line goes down from left to right**

For numbers 6-7 find the slope of the line that passes through the given points.

*to find the slope of the line that passes through two points use the formula:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

6. $(-2\ 5), (-2, 1)$

$\frac{1-5}{-2-(-2)} = \frac{-4}{0}$ = Undefined

7. (20, 5) and (10, 1)

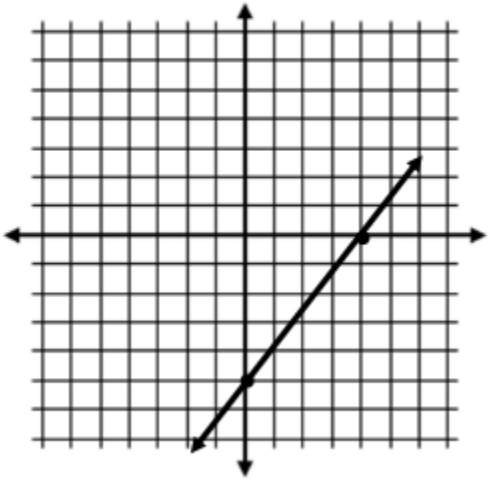
$\frac{1-5}{10-20} = \frac{-4}{-10} = \frac{2}{5}$

8. Graph $4y - 5x = -20$ using x and y intercepts.

*Recall that to find the x-intercept you replace y with 0
And to find the y-intercept you replace x with 0

$4y - 5x = -20$
$4(0) - 5x = -20$
$0 - 5x = -20$
$-5x = -20$
$x = 4$

$4y - 5(0) = -20$
$4y - 0 = -20$
$4y = -20$
$y = -5$



x – int: ___4_____ (over 4 spaces)

y – int: ____−5_____ (down 5 spaces)

9. Find the x and y intercepts of the following equation:

$3x + 2y = 7$

$3x + 2(0) = 7$
$3x + 0 = 7$
$\frac{3x}{3} = \frac{7}{3}$

$3(0) + 2y = 7$
$0 + 2y = 7$
$\frac{2y}{2} = \frac{7}{2}$

***x*-int:**_____$\frac{7}{3}$_____

***y*-int:**_____$\frac{7}{2}$_____

10. Identify the slope and y-intercept of the equation $y = 3x - 4$

Slope:_____3_____

***y*-intercept:**___−4_____

*Once an equation is written in slope-intercept form
To identify the slope, look for the coefficient of x and to find
The y-intercept, look for the number that is being added or subtracted.

11. Find the slope and *y*-intercept of the line with the equation: $5x - 2y = 10$

*Before you can identify the slope and y-intercept, the equation Needs to be written in slope-intercept form (*y*-needs to be isolated)

Slope: $\frac{5}{2}$

***y*-intercept:** -5

$$5x - 2y = 10$$
$$-5x \quad -5x$$
$$\frac{-2y}{-2} = \frac{10 - 5x}{-2}$$
$$y = -5 + \frac{5}{2}x$$

Identify the slope and *y*-intercept, then graph the equation using slope-intercept form.

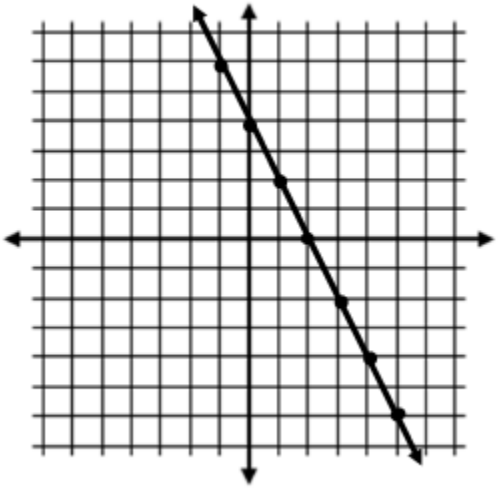
*Once you identify *m* and *b*, start your graph at the *y*-intercept (*b*), then go where the rise and run tell you to go.

12. $y = 4 - 2x$

$m =$ -2

$b =$ 4

*start up 4, rise is −2 (down 2) run is 1 (over 1)

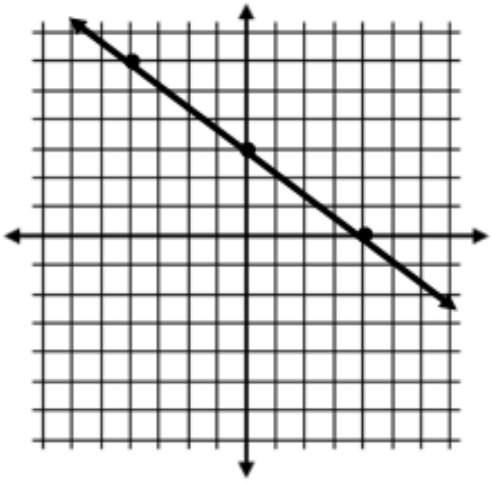


13. $3x + 4y = 12$ $y = 3 - \frac{3}{4}x$

$m =$ $-\frac{3}{4}$

$b =$ 3

*Start up 3, rise is −3 (down 3) and run is 4 (over 4)



Decide whether the graphs of the two lines are parallel lines. Explain why or why not.

*Recall that lines are parallel if they have the same slope, but to decide what the slope is, the equations need to be in slope-intercept form

14. $y = -3x - 2$; $3y - 9x = -6$

The first equation is already in slope-intercept form, so you can easily identify the slope, which is −3

The second equation needs to be rewritten in slope-intercept form first.

$3y - 9x = -6$
$+9x \quad +9x$
$\frac{3y}{3} = \frac{-6 + 9x}{3}$
$y = -2 + 3x$ Now this equation is in slope-intercept form so you can see that the slope is 3.

The slopes are 3 and −3, which are not the same, so the lines are not parallel.

15. What is the value of the function when $x = 4$?

*What is the output when the input is 4. Everywhere you see an x, substitute in 4

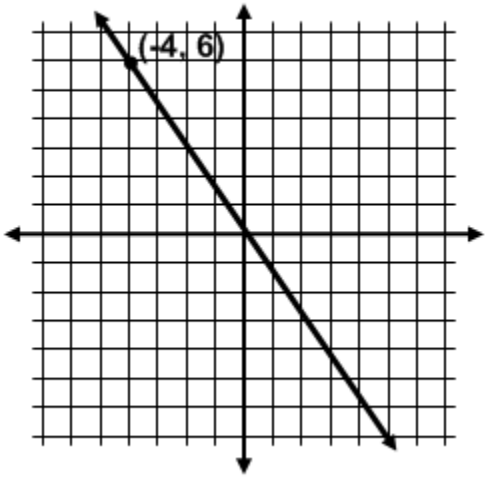
$f(x) = -2x - 3$
$f(4) = -2(4) - 3$
$f(4) = -8 - 3$
$f(4) = -11$ *this just means that when the input is 4 the output is −11

16. Let $g(x) = 2x + 1$. Find x when $g(x) = 3$

This time you are being told what $g(x)$ equals, so everywhere you see $g(x)$ replace it with 3. You are trying to find x, so x cannot be replaced

$3 = 2x + 1$ Solve like normal for x
$1 = x$

17. a) Assume x and y vary directly. Write the direct variation equation relating x and y.



To have a direct variation equation, you need to know the constant of variation (a). Once you know a, plug it into $y = ax$

$y = ax$ Plug in x and y (which you get from the point)
$6 = a(-4)$ Solve for a
$-\frac{3}{2} = a$

$y = -\frac{3}{2}x$

b) Find y if $x = -2$

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

18. You are selling tickets to a school play and can sell to students and adults. Student tickets cost $5 each and adult tickets cost $10. You need to make $90.

a. Write an equation to represent the situation

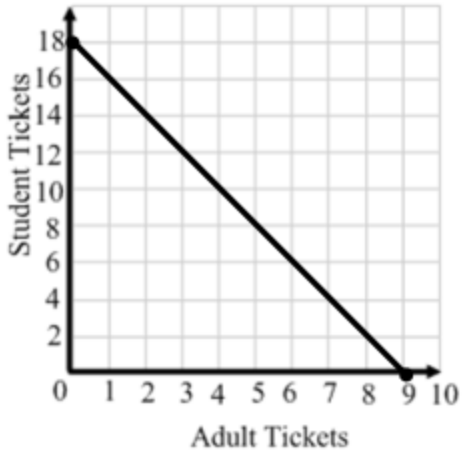
$10x + 5y = 90$

b. Find the x and y intercepts of the graph of the equation.

x-int:___9_____

y-int:____16_____

c. Graph the equation.



d. Give three possibilities for the number of each type of ticket that could be sold.

9 adults, 0 students
0 adults, 18 students
Look on the line for other possible values