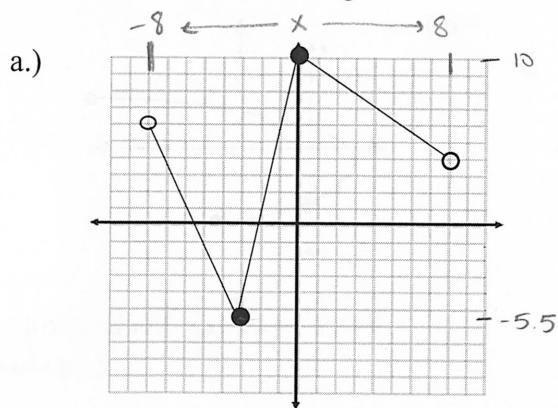


1. Match each term with the correct example.

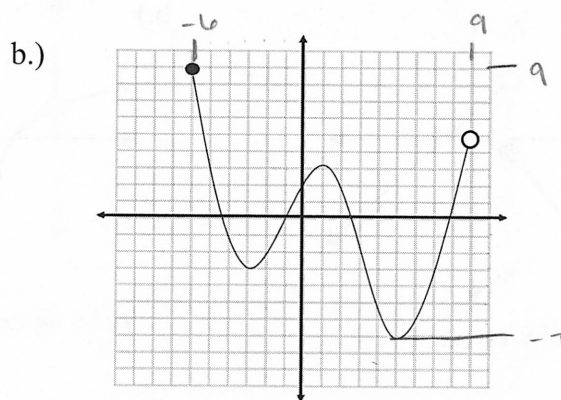
A Parallel Lines	$m = \frac{5}{6}$ $-5x + 6y = 14$ and $-6x - 5y = 26$	C.
B. Line with a negative slope.	Slope is zero, $y = 7$	E.
C Perpendicular Lines	$m = -\frac{6}{5}$ $-\frac{2}{3}x - y = 12$	B.
D Point/Slope form for a line	$x = 3$ and m is undefined	I.
E Horizontal Line	$-6x + 4y = 32$ $m = \frac{6}{4} = \frac{3}{2}$	F.
F. Line with a positive slope.	$\frac{y_2 - y_1}{x_2 - x_1}$	H.
G Standard Form for a line	$y = mx + b$	J.
H slope	$y - y_1 = m(x - x_1)$	D.
J Vertical Line	$m = -3$ $-3x - 33 = y$ and $y = -3x + 12$ $m = -3$	A.
I Slope/intercept form for a line	$Ax + By = C$	G.

2. Find the Domain and Range.



Domain: $-8 < x < 8$

Range: $-5.5 \leq y \leq 10$



Domain: $-6 \leq x < 9$

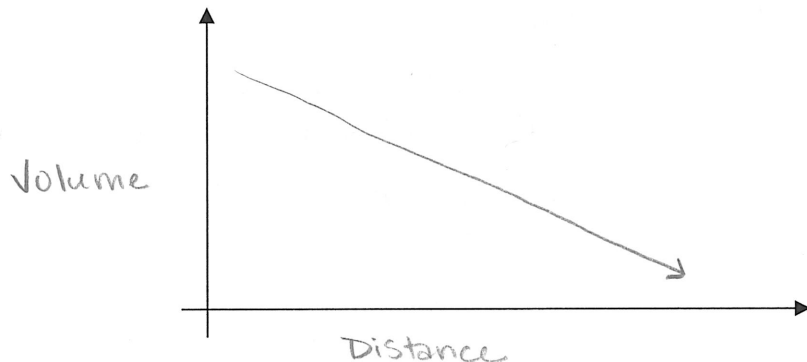
Range: $-7 \leq y \leq 9$

3. Consider the relation: The distance you are from the band and how loud it sounds to you.

a.) Identify the Independent Variable: Distance

Identify the Dependent Variable: Volume

b.) Sketch a reasonable graph AND label the axes appropriately.



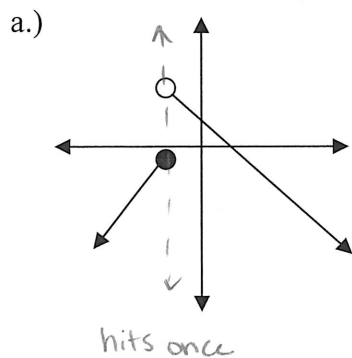
4. Answer yes or no if each of the following is a function.

a.) $\{(-2, 4) (-1, 1) (1, 1) (2, 4)\}$ function? Yes

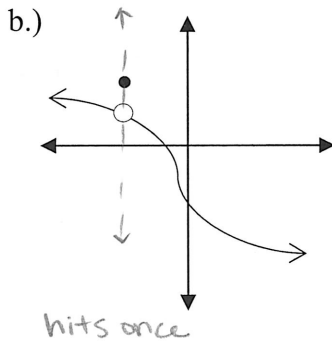
b.) $\{(4, -2) (1, -1) (1, 1) (4, 2)\}$ function? No
Repeating x-value

c.) $\{(a, b) (a, c) (b, a) (c, b)\}$ function? No
Repeating x-value

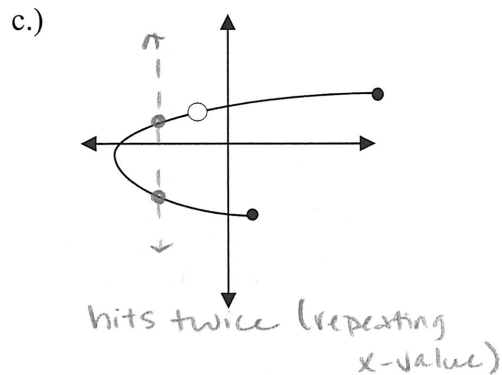
5. Answer yes or no if each of the following is a function.



function? Yes



function? Yes



function? No

6. Use the functions below to complete the **ordered pair**.

Let: $f(x) = 2x^2 - 6$

$g(x) = 5 - x$

$h(x) = |-6x + 2|$

a.) $f(3) = 2(3)^2 - 6$
 $= 2(9) - 6$
 $= 18 - 6$
 $y = 12$

b.) $h(-12) = |-6(-12) + 2|$
 $= |72 + 2|$
 $= |74|$
 $y = 74$

6a. (3, 12)

6b. (-12, 74)

c.) $g(-9) = 5 - (-9)$
 $= 5 + 9$
 $y = 14$

d.) $g(3-b) = 5 - (3-b)$
 $= 5 - 3 + b$
 $y = 2 + b$

6c. (-9, 14)

6d. (3-b, 2+b)

7. Graph each equation by first finding the x and y intercepts.

a.) $-6x + 3y = 12$ x-int = (-2, 0) (y=0)

b.) $2x + 4y = 16$

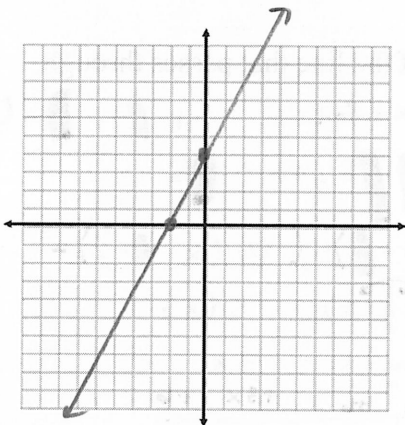
x-int = (8, 0) (y=0)

y-int = (0, 4) (x=0)

y-int = (0, 4) (x=0)

y=0:
 $-6x + 3(0) = 12$

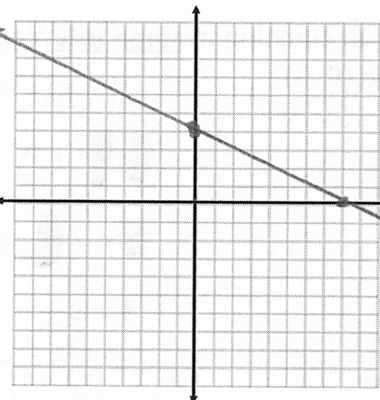
$-6x = 12$
 $\frac{-6x}{-6} = \frac{12}{-6}$
 $x = -2$



y=0

$2x + 4(0) = 16$

$2x = 16$
 $\frac{2x}{2} = \frac{16}{2}$
 $x = 8$



x=0

$2(0) + 4y = 16$

$4y = 16$
 $\frac{4y}{4} = \frac{16}{4}$
 $y = 4$

8. Find the slope in each situation.

a.) $\frac{2x}{2} = \frac{10}{2}$

$x = 5$ (vertical line)

undefined or No Slope

b.) $-3x + 6y = 13$

$m = -\frac{A}{B} \rightarrow \frac{3}{6} = \frac{1}{2}$

8a. Undefined / No Slope

8b. $m = \frac{1}{2}$

c.) The line containing the points (3, -4) and (6, 8)

x_1, y_1, x_2, y_2

d.) $\frac{-2y}{-2} = \frac{20}{-2}$

$y = -10$ (Horizontal Line)

8c. $m = 4$

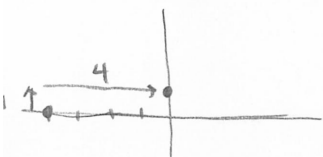
8d. $m = 0$

$m = \frac{8 - (-4)}{6 - 3} = \frac{12}{3} = 4$

$m = 0$

e.) A line with the y-intercept = 1 and x-intercept = -4

8e. $m = \frac{1}{4}$



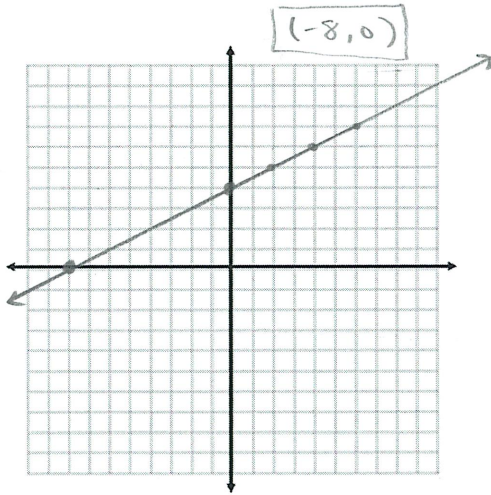
9. Graph each equation. Show all of your work (show me your substitution (or) y-intercept and slope).

a.) $-3x + 6y = 24$

$\frac{6y}{6} = \frac{3x}{6} + \frac{24}{6}$ OR

$y = \frac{1}{2}x + 4$

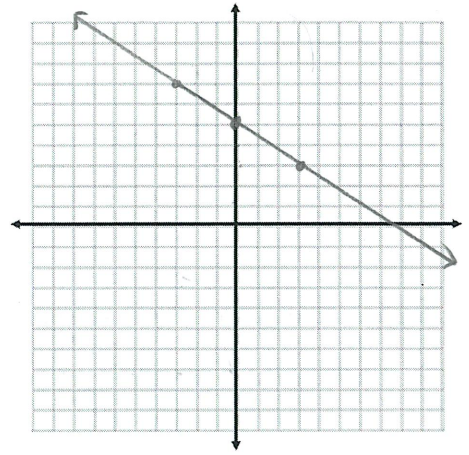
$b = 4$
 $m = \frac{1}{2}$



b.) $y = \frac{-2}{3}x + 5$

$b = 5$

$m = \frac{-2}{3}$ or $m = \frac{2}{-3}$



10. Find an equation in slope/intercept form or standard form of the line that passes through

$(-2, 6)$ and $(0, 3)$.

$m = \frac{3-6}{0-(-2)}$

$m = \frac{-3}{2}$

$y = mx + b$
 $(0, 3), m = -3/2$

$3 = -3/2(0) + b$

$3 = b$

$y = -3/2x + 3$

OR

$Ax + By = C; y - y_1 = m(x - x_1)$

$(0, 3), m = -3/2$

$2(y - 3) = (-3/2(x - 0)) \cdot 2$

$2(y - 3) = -3(x)$

$2y - 6 = -3x$

$+3x + 6 \quad +3x + 6$

$3x + 2y = 6$

10. _____

11. Find an equation in slope/intercept form or standard form of the line containing point P $(-2, 5)$ and having slope $m = \frac{-3}{4}$

$y = mx + b$

$5 = -3/4(-2) + b$

$5 = \frac{3}{2} + b$

$\frac{7}{2} = b$

$y = -3/4x + 7/2$

OR

$Ax + By = C \rightarrow y - y_1 = m(x - x_1)$

$4(y - 5) = (-3/4(x - (-2))) \cdot 4$

$4(y - 5) = -3(x + 2)$

$4y - 20 = -3x - 6$

$+3x + 20 \quad +3x + 20$

$3x + 4y = 14$

11. _____

12. Consider the line: $-2x - 7y = 28$. $m = \frac{+2}{-7} \rightarrow m = -\frac{2}{7}$

a.) What is the slope of a line that is parallel to the given line?

12a. $m = -\frac{2}{7}$

b.) What is the slope of a line that is perpendicular to the given line?

12b. $m = \frac{7}{2}$

13. Find equations in **slope/intercept form or standard form** of the lines go through point $P(0, -5)$ and that are parallel and perpendicular to line L

L: $y = \frac{3}{4}x + 2 \Rightarrow m = \frac{3}{4}$

Parallel: $(0, -5)$ $m = \frac{3}{4}$

$y = mx + b$
 $-5 = \frac{3}{4}(0) + b$

$-5 = b$

$y = \frac{3}{4}x - 5$

$Ax + By = C \Rightarrow y - y_1 = m(x - x_1)$
 $y - (-5) = \frac{3}{4}(x - 0)$

$4(y + 5) = (3/4 x) \cdot 4$

$4y + 20 = 3x$
 $-4y$ $-4y$

$20 = 3x - 4y$ or $3x - 4y = 20$

Perpendicular: $(0, -5)$ $m = -\frac{4}{3}$

$y = mx + b$
 $-5 = -\frac{4}{3}(0) + b$

$-5 = b$

$y = -\frac{4}{3}x - 5$

$Ax + By = C \rightarrow y - y_1 = m(x - x_1)$
 $y - (-5) = -\frac{4}{3}(x - 0)$

$3(y + 5) = (-\frac{4}{3}x) \cdot 3$

$3y + 15 = -4x$
 $+4x$ -15 $+4x$ -15

$4x + 3y = -15$

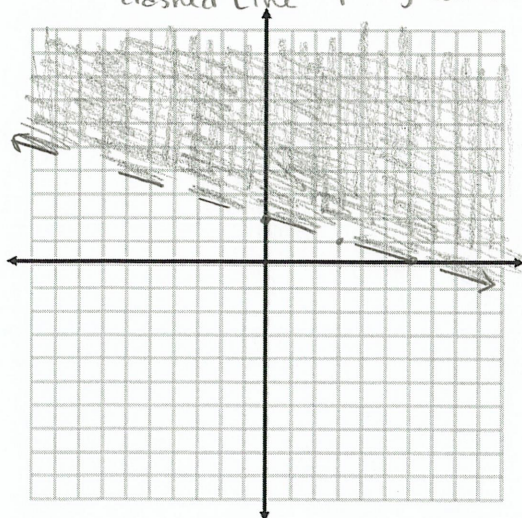
14. Graph the solution to each inequality.

a.) $6x + 18y > 36$

$-6x$ $-6x$ $b = 2$
 $\frac{18y}{18} > \frac{-6x}{18} + \frac{36}{18}$ $m = -\frac{1}{3}$

$y > -\frac{1}{3}x + 2$

dashed line y is greater = Shade above line

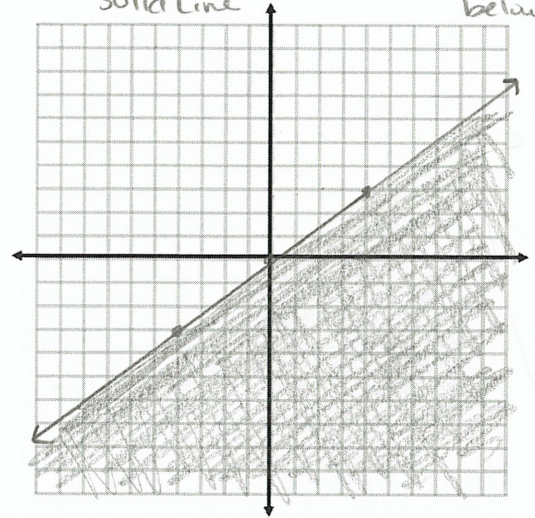


b.) $3x - 4y \geq 0$

$-3x$ $-3x$ $b = 0$
 $-\frac{4y}{-4} \geq \frac{-3x}{-4}$ $m = \frac{3}{4}$

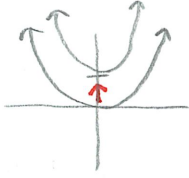
$y \leq \frac{3}{4}x$

Solid Line y is less = shade below line



15. Find the domain and range for each of the following

a.) $f(x) = x^2 + 3$ ← outside f^2 (shifts up)



15a. Domain: \mathbb{R}

Range: $y \geq 3$

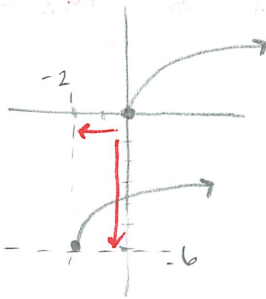
b.) $f(x) = |x - 4|$ ← inside f^2 (shifts right)



15b. Domain: \mathbb{R}

Range: $y \geq 0$

c.) $f(x) = \sqrt{x + 2} - 6$ ← outside f^2 (shift down)
← inside f^2 (shifts left)



15c. Domain: $x \geq -2$

Range: $y \geq -6$