

Name:

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Hour:

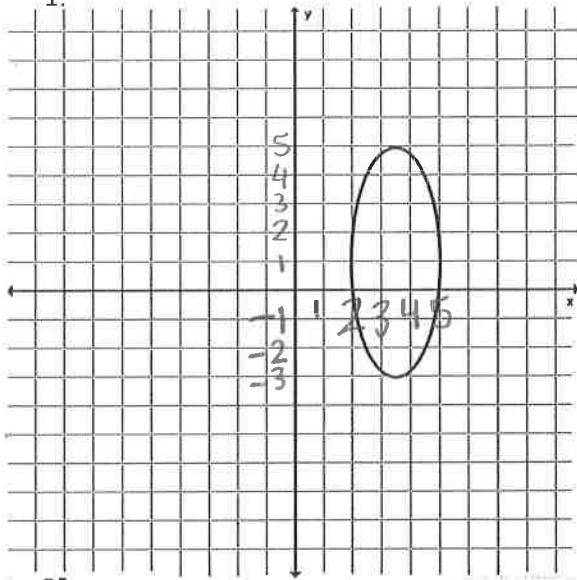
KEY

Algebra 1

WS PC #1 Review - Unit 2

Find the domain and range and determine if it is a function. Support your answer.

1.



D: $\{2 \leq x \leq 5\}$

R: $\{-3 \leq y \leq 5\}$

Linear: Y or N

Not a straight line

3.

x	-3	4	0	4
y	1	2	3	5

D: $\{-3, 0, 4\}$

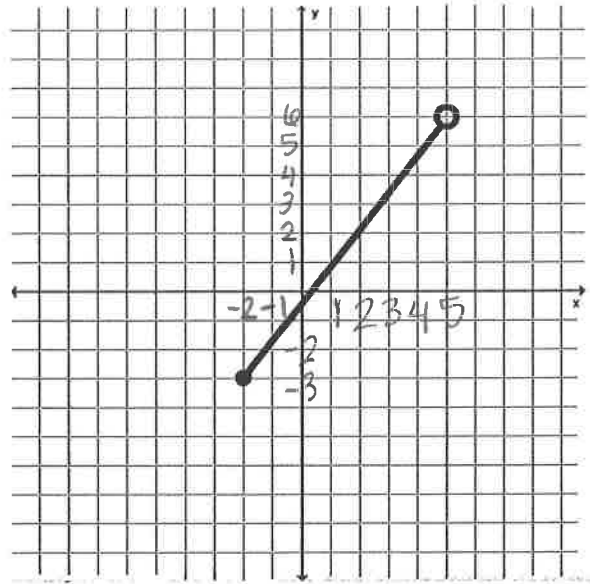
R: $\{1, 2, 3, 5\}$

Linear: Y or N

$$\frac{\Delta y}{\Delta x} \quad \frac{1}{7} \quad \frac{1}{-4} \quad \frac{2}{4} = \frac{1}{2}$$

not a constant rate of change.

2.



D: $\{-2 \leq x < 5\}$

R: $\{-3 \leq y < 6\}$

Linear: Y or N

it is a straight line

4.

x	2	1	0	-1
y	4	7	7	4

D: $\{2, 1, 0, -1\}$

R: $\{4, 7\}$

Linear: Y or N

$$\frac{\Delta y}{\Delta x} \quad \frac{3}{-1} \quad \frac{0}{-1} = 0 \quad \frac{-3}{-1} = 3$$

not a constant rate of change.

5. Create a mapping for the following points and determine if it is a function. Support your answer.

$\{(-6, 8), (-2, 9), (0, 10), (-2, 11), (-5, 12)\}$

Function: Your input(x) CANNOT repeat

x	y
-6	8
-5	12
-2	9
-2	11
0	10

Not a function, the input value of -2 has more than 1 output

Given $f(x) = 8 - 3x$ and $g(x) = 5 + 2x^2$, find the following:

6. $f(-10)$

$$f(-10) = 8 - 3(-10)$$

$$= 8 + 30$$

$$f(-10) = 38$$

$$(-10, 38)$$

7. $g(-1)$

$$g(-1) = 5 + 2(-1)^2$$

$$= 5 + 2(1)$$

$$= 5 + 2$$

$$g(-1) = 7$$

$$(-1, 7)$$

8. $f(0) - g(2)$

$$f(0) = 8 - 3(0) = 8$$

$$g(2) = 5 + 2(2)^2 = 5 + 2(4) = 5 + 8 = 13$$

$$f(0) - g(2) = 8 - 13 = -5$$

9. $3g(7)$

$$g(7) = 5 + 2(7)^2$$

$$= 5 + 2(49)$$

$$= 5 + 98$$

$$g(7) = 103$$

$$3g(7) = 3(103)$$

$$= 309$$

10. $g(-5) + f(5)$

$$g(-5) = 5 + 2(-5)^2 = 5 + 2(25) = 5 + 50 = 55$$

$$f(5) = 8 - 3(5) = 8 - 15 = -7$$

$$g(-5) + f(5) = 55 + (-7) = 48$$

11. $\frac{f(-4)}{5}$

$$f(-4) = 8 - 3(-4) = 8 + 12 = 20$$

$$\frac{f(-4)}{5} = \frac{20}{5} = 4$$

Write the function and solve for the given information.

~~12.~~ A personal trainer charges a set-up fee of \$50 for new customers plus a fee for each hour. If it cost \$230 for 12 hours of training, what is the fee for each hour?

Do not do

13. Mrs. Roberts is going to get senior pictures taken of her daughter. She finds a photographer who charges \$120 for the sitting fee and \$15 for each pose. Write a function to represent the total cost of the pictures for x poses. If Mrs. Roberts paid \$195 to the photographer, how many poses did they use?

① $f(x) = 15x + 120$

$x = \#$ of poses

② $195 = 15x + 120$

$$\begin{array}{r} 195 = 15x + 120 \\ -120 \quad -120 \\ \hline 75 = 15x \end{array}$$

$$\frac{75}{15} = \frac{15x}{15}$$

$$x = 5 \text{ poses}$$

x-intercept: plug in $y=0$ and solve for x

y-intercept: plug in $x=0$ and solve for y

Find the x- and y-intercepts of each function. Write the intercepts as an ordered pair. Then graph.

14. $3x - 2y = 12$

x-intercept:

$$3x - 2(0) = 12$$

$$\frac{3x}{3} = \frac{12}{3}$$

$$x = 4$$

$$(4, 0)$$

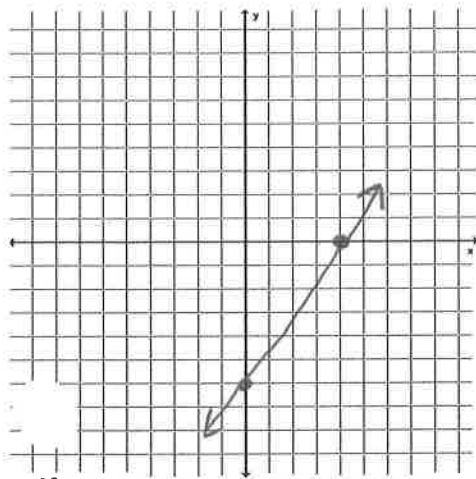
y-intercept:

$$3(0) - 2y = 12$$

$$\frac{-2y}{-2} = \frac{12}{-2}$$

$$y = -6$$

$$(0, -6)$$



15. $-6x - 8y = 16$

x-intercept:

$$-6x - 8(0) = 16$$

$$\frac{-6x}{-6} = \frac{16}{-6}$$

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

$$\left(-\frac{8}{3}, 0\right)$$

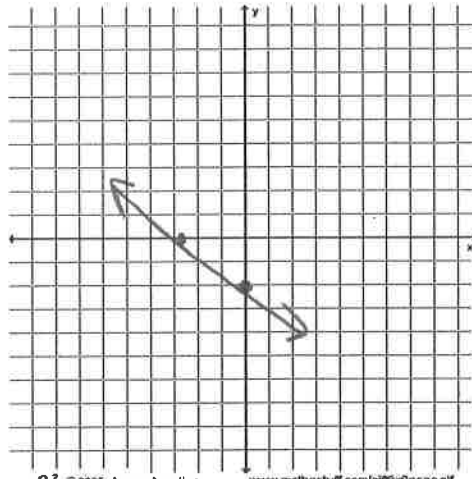
y-int:

$$-6(0) - 8y = 16$$

$$\frac{-8y}{-8} = \frac{16}{-8}$$

$$y = -2$$

$$(0, -2)$$



16. $9y + 3x = 9$

x-int:

$$9(0) + 3x = 9$$

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

$$x = 3$$

$$(3, 0)$$

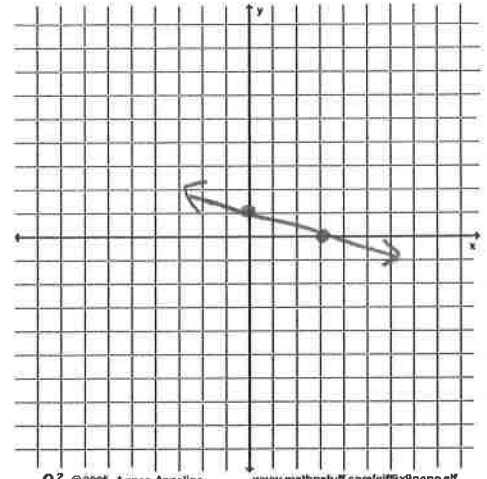
y-int:

$$9y + 3(0) = 9$$

$$\frac{9y}{9} = \frac{9}{9}$$

$$y = 1$$

$$(0, 1)$$



17. Solve each equation for y .

a. $5x - 3y = -15$

$$\frac{-3y}{-3} = \frac{-5x - 15}{-3}$$

$$y = \frac{5}{3}x + 5$$

b. $y - 3 = 2(x - 4)$

$$y - 3 = 2x - 8$$

$$y = 2x - 5$$

c. $\frac{1}{2}x - 3y = 12$

$$\frac{-3y}{-3} = \frac{-\frac{1}{2}x + 12}{-3}$$

$$y = \frac{1}{6}x - 4$$

18. Solve each for the given variable.

a. Solve for a : $c\left(\frac{a-b}{c}\right) = (xy)c$

$$\frac{a-b}{c} = xy$$

$$a = xyc + b$$

b. Solve for x : $b(x+y) = a - c$

$$bx + by = a - c$$

$$bx = a - c - by$$

$$x = \frac{a - c - by}{b}$$

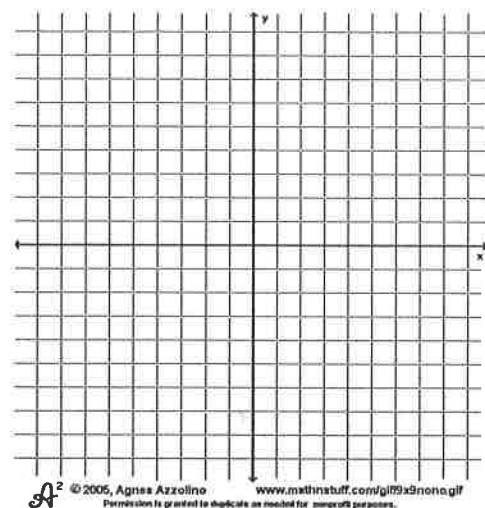
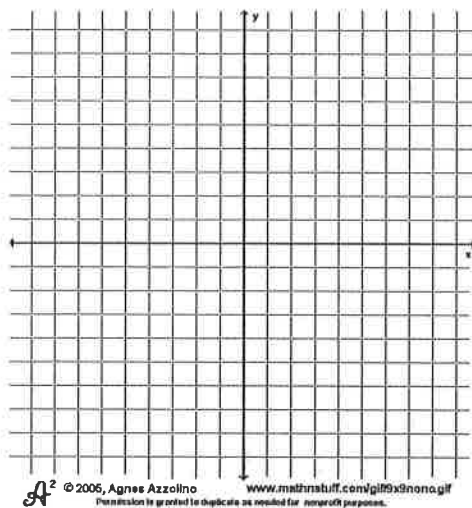
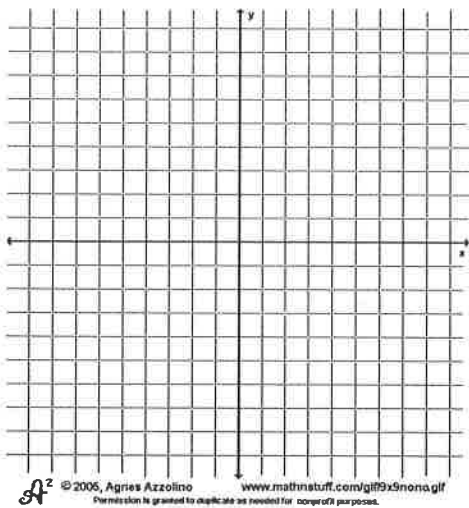
19. Graph each function.

Do not do.

a. $y = -3x - 1$

b. $y = \frac{2}{3}x + 4$

c. $f(x) = -\frac{4}{3}x - 5$



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20. Simplify each.

a. $x^3y^{-5} \cdot xy^{-1}$

$x^{3+1} y^{-5+-1}$

$x^4 y^{-6}$

x^4
y^{-6}

b. $(2x^{-2}y^4)^{-3}$

$2^{-3} x^{-2 \cdot -3} y^{4 \cdot -3}$

$2^{-3} x^6 y^{-12}$

$\frac{x^6}{2^3 y^{12}}$

x^6
$8y^{12}$

c. $\frac{x^8y^{-6}x^3}{(x^2y^{-3})^4}$

$\frac{x^{8+3} y^{-6}}{x^{2 \cdot 4} y^{-3 \cdot 4}}$

$\frac{x^{11} y^{-6}}{x^8 y^{-12}}$

$\frac{x^{11} y^{12}}{x^8 y^6}$

$x^{11-8} y^{12-6}$

$x^3 y^6$
