

Name: Key

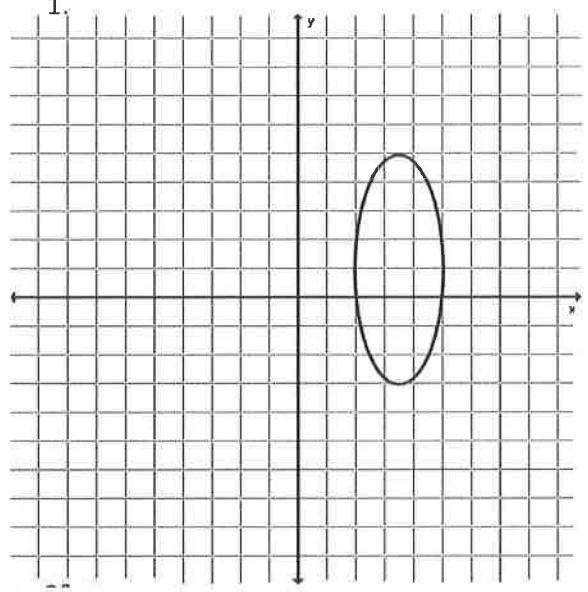
Date:

Hour:

Algebra 1
WS PC #1 Review – Unit 2

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

1.

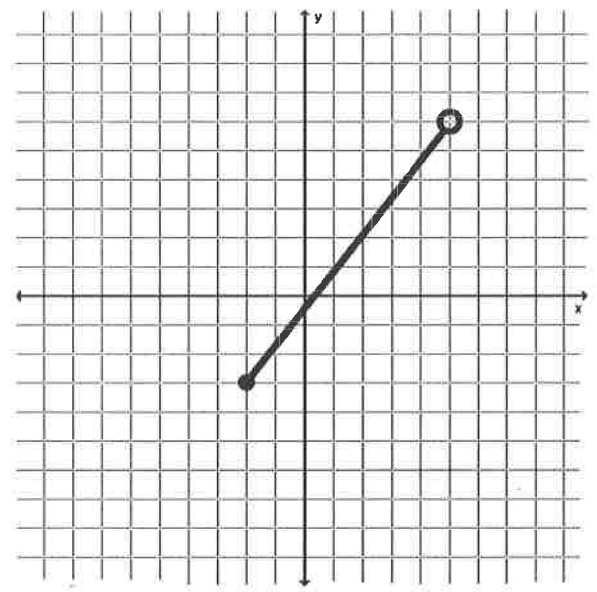


D: $\{2 \leq x \leq 5\}$

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

Linear: Y or N Fails vert. line test

2.



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

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

Linear: Y or N st. 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 X repeats so not a function

4.

x	2	1	0	-1
y	4	7	7	4

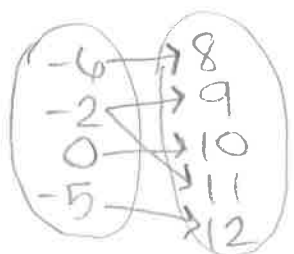
D: $\{2, 1, 0, -1\}$

R: $\{4, 7\}$

Linear: Y or N X does not repeat

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

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



not a function, x repeats

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. $g(-1)$

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

$$= 5 + 2$$

$$g(-1) = 7$$

$$(-1, 7)$$

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

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

$$= 8 - 0$$

$$= 8$$

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

$$= 5 + 8$$

$$= 13$$

$$8 - 13 = -5$$

9. $3g(7)$

$$3g(7) = 5 + 2(7)^2$$

$$= 103$$

$$3(103)$$

$$309$$

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

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

$$= 5 + 50$$

$$= 55$$

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

$$= 8 - 15$$

$$= -7$$

$$55 + -7 = 48$$

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

$$f(-4) = 8 - 3(-4)$$

$$= 8 + 12$$

$$= 20$$

$$\frac{20}{5} = 4$$

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?

$$y = mx + b$$

$$230 = m(12) + 50$$

$$\begin{array}{r} 230 \\ -50 \\ \hline 180 \end{array} = \begin{array}{r} m(12) \\ -50 \\ \hline 12m \end{array}$$

$$\frac{180}{12} = \frac{12m}{12}$$

$$m = \$15/\text{hr}$$

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?

$$f(x) = 15x + 120$$

$$195 = 15x + 120$$

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

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

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

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

14. $3x - 2y = 12$

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

$$x = 4 \quad y = -6$$

$(4, 0)$ $(0, -6)$

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

$$\frac{-6x}{-6} = \frac{16}{-6} \quad \frac{-8y}{-8} = \frac{16}{-8}$$

$$x = -\frac{8}{3} \quad y = -2$$

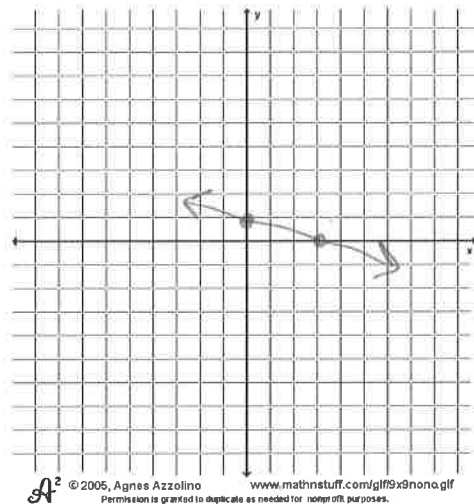
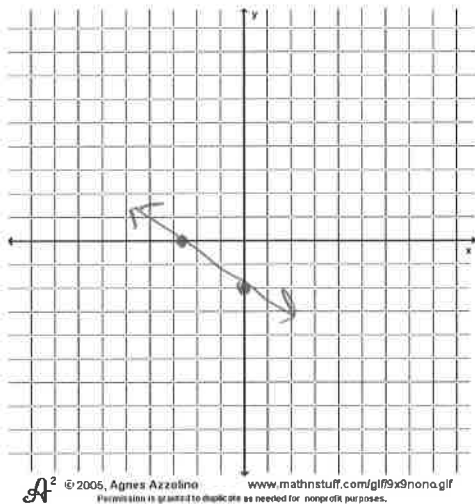
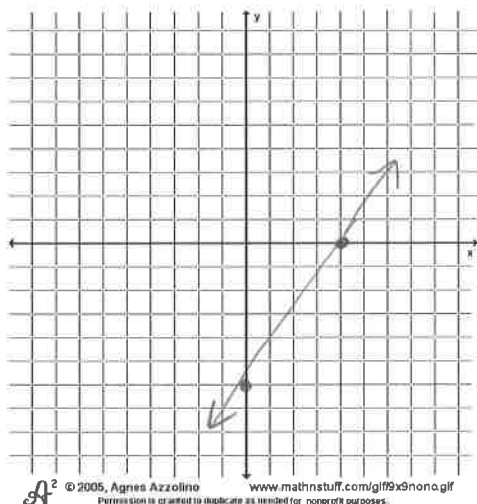
$(-\frac{8}{3}, 0)$ $(0, -2)$

16. $9y + 3x = 9$

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

$$y = 1 \quad x = 3$$

$(0, 1)$ $(3, 0)$



17. Solve each equation for y.

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

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

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

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

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

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

$$+3 \quad +3$$

$$y = 2x - 5$$

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

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

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

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

18. Solve each for the given variable.

a. Solve for a: $C \cdot \frac{a-b}{c} = xy \cdot C$

$$a - b = xyc$$

$$+b \quad +b$$

$$a = b + xyc$$

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

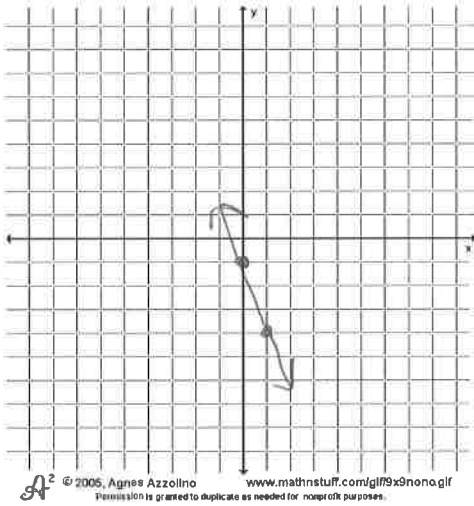
$$bx + by = a - c$$

$$-by \quad -by$$

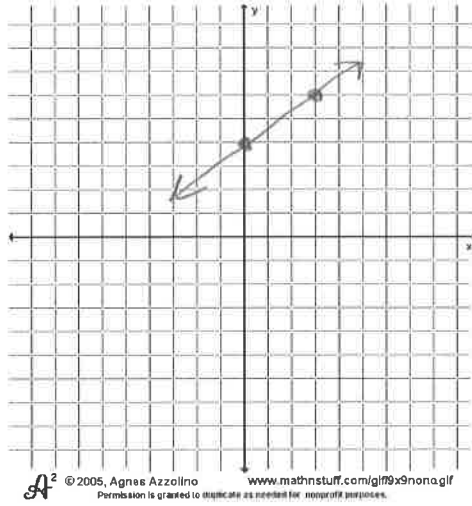
$$\frac{bx}{b} = \frac{a - c - by}{b} \quad x = \frac{a - c - by}{b}$$

19. Graph each function.

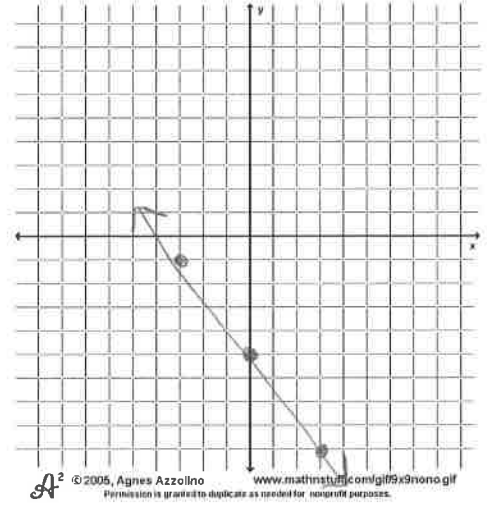
a. $y = -3x - 1$



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



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



20. Simplify each.

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

$$x^4y^{-6}$$

$$\boxed{\frac{x^4}{y^6}}$$

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

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

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

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

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

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

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

$$11-8=3$$

$$12-6=6$$

$$\boxed{x^3y^6}$$