

# Review 8-Algebra: Unit 4 Linear Functions

Name \_\_\_\_\_ Period \_\_\_\_\_

Target 1: Interpret the structure of expressions and interpret functions in context (A.SSE and F.IF.4,6)

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1) Write each equation in standard form using integers.

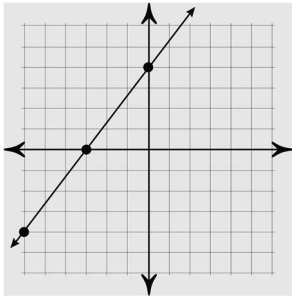
$$\frac{1}{3}x - y = -4$$

$$4y = 2x - 3$$

$$-4x + 5y = 7$$

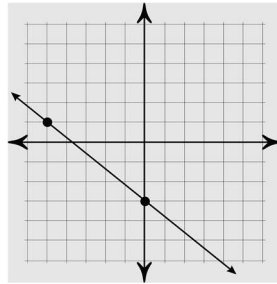
$$4x = \frac{2}{3}y + 2$$

2) For each graph, identify the slope and  $y$ -intercept, and then write the equation in slope intercept form.



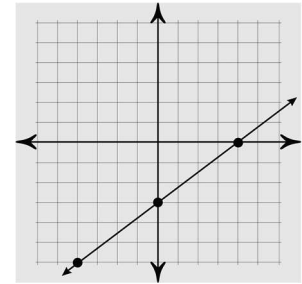
$m =$        $b =$

Equation \_\_\_\_\_



$m =$        $b =$

Equation \_\_\_\_\_



$m =$        $b =$

Equation \_\_\_\_\_

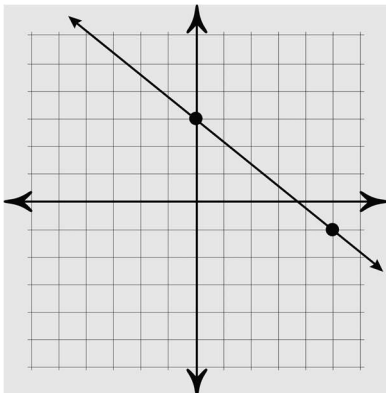
3) Write an equation in slope-intercept form of the line that passes through the two points?

$(0, 3)$   $(2, -2)$

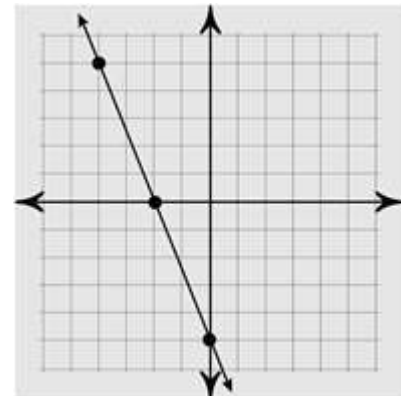
$(-5, -4)$   $(5, 0)$

$(-1, -3)$   $(4, 2)$

4) Write the equation in **point-slope form** for the graphs below.



Equation \_\_\_\_\_



Equation \_\_\_\_\_

5) You buy your friend a \$50 gift card to download music. Each song downloaded costs \$1.25. She wants to keep track of how much money she has left on the gift card as she purchases music. (A.SSE.1 Level 3)

a) What is the slope in this situation and what does it represent?

b) What is the y-intercept and what does it represent?

6) Jim is mowing lawns to earn money. He has mowed several lawns already and earned \$120. He charges \$10 per lawn. He wants to determine his total money earned as he continues to mow lawns. (A.SSE.1 Level 3)

a) What is the slope in this situation and what does it represent?

b) What is the y-intercept and what does it represent?

7) Identify the point given in the following point-slope equations:

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

(    ,    )

$$y - 4 = \frac{1}{2}(x + 5)$$

(    ,    )

$$y + 4 = -2(x + 6)$$

(    ,    )

8) Find the slope of a line that passes through each pair of points  
 (2, 2) (-8, -4)                      (-3, 2) (1, 5)

9) We went on a road trip. On Monday, we had traveled a total of 550 miles, two days later we had traveled a total of 900 miles. Find the rate of change for the situation and label your answer.

10) Find the rate of change and explain what it means.

Cups of flour	Number of cookies
3	45
5	75
7	105
9	135

**Target 2: Create equations that relationships and analyze these with multiple representations.**  
**A(A.CED.2, A.FIF.7-9)**

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11) Cascade Marching Band is sponsoring a spaghetti dinner to raise money for a field trip. They estimate 200 adults and 250 children will attend. Let  $x$  represent the cost of an adult ticket and  $y$  represent the cost of a child's ticket. Write an equation that can be used to find what ticket prices to set in order to make \$3800.

12) Each fork in a store costs \$5, and each knife costs \$4. If you want to spend exactly \$36, write an equation in standard form modeling this situation. Let  $f$  represent the number of forks you buy, and  $k$  represent the number of knives you buy. Write the equation to model the situation.

13) Cyndi is starting a business tutoring students in math. They charge a registration fee of \$40 and charge \$25 per session for each student. The table shows several total bill depending on the number of tutoring sessions. Write an equation that represents the situation.

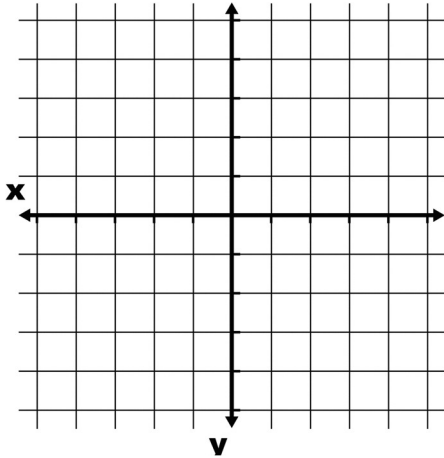
Number of sessions	Total Bill
0	\$40
5	165
10	290
15	415
20	540

14) You are buying pounds of almonds. The company charges a flat fee for shipping. George bought 4 pounds for \$62 and 8 pounds for \$110. Write an equation that represents the total money spent for buying any number of pounds of almonds. Write your final answer in slope intercept form.

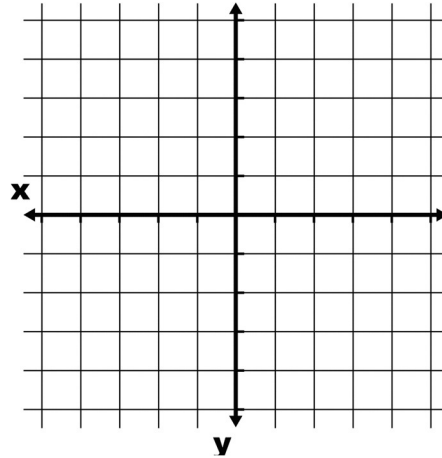
15) Tim started tracking how much snow was left after the sun came out. After 4 hours there was 8 inches of snow, after 6 hours there was 5.5 inches of snow. Write an equation that represents the amount of snow left after any number of hours. Write your final answer in slope intercept form.

16) Graph each of the equations and then give **2 points** (with integers) on the line.

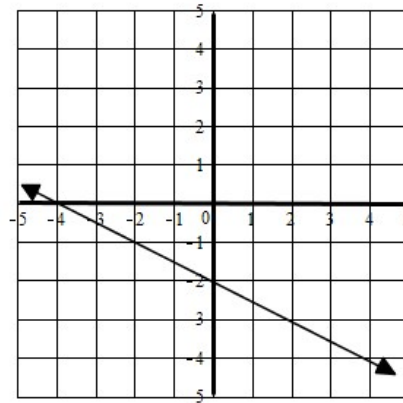
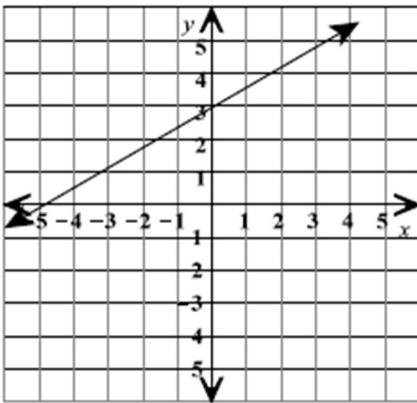
$$y - 5 = -2(x + 1)$$



$$y + 5 = 3(x - 1)$$

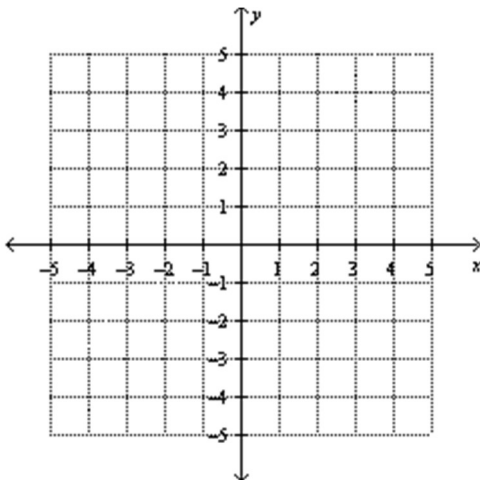


17) What is the equation of the line in slope intercept form?

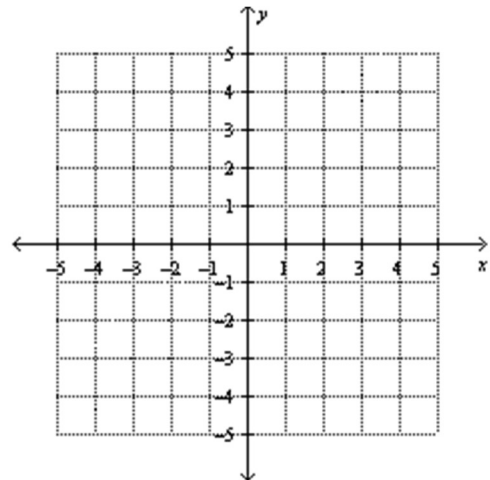


18) Graph the equations below and identify the x- and y- intercepts:

$$2x - 2y = 6$$



$$5x + 3y = 15$$



x-intercept \_\_\_\_\_ y-intercept \_\_\_\_\_

x-intercept \_\_\_\_\_ y-intercept \_\_\_\_\_

19) I can't decide which gym to join. Here is a schedule of each.

Exercise a Go-Go

# of months	Cost (dollars)
0	0.00
2	70.00
4	140.00
6	210.00

Workouts R Fun

# of months	Costs (dollars)
0	10.00
3	85.00
6	160.00
9	235.00

a) What are the slopes for each company?

Exercise a Go-Go \_\_\_\_\_

Workouts R Fun \_\_\_\_\_

b) What are the y-intercepts for each company?

Exercise a Go-Go \_\_\_\_\_

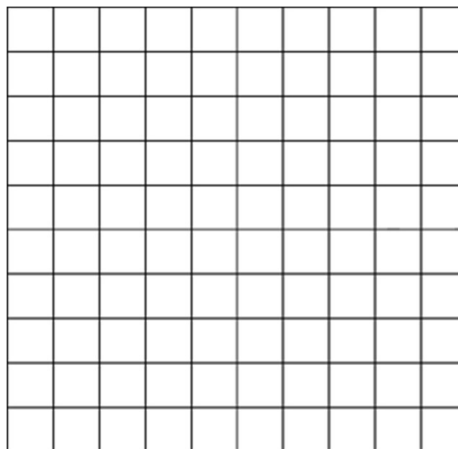
Workouts R Fun \_\_\_\_\_

c) Pick a gym to join and justify your decision using the above information.

20) A store sells gift cards for two amounts. You can purchase \$20.00 gift cards or \$50.00 gift cards. You spent \$230 on gift cards. Let  $x$  = the number of \$20 gift cards purchased. Let  $y$  = the number of \$50 gift cards purchased.

**Table**


**Graph**

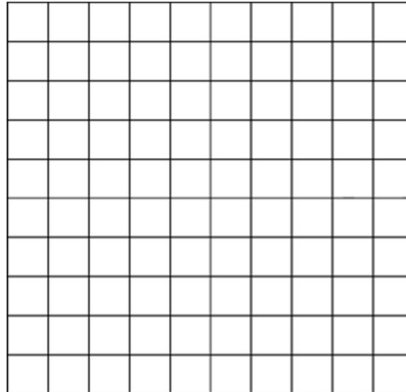


**Equation**

21) You have \$50 to spend sandwich meats for a party. Ham costs \$5 per pound and turkey costs \$4 per pound. Write and equation to relate the pounds of each type of meat you could purchase with your \$50.

**Table**

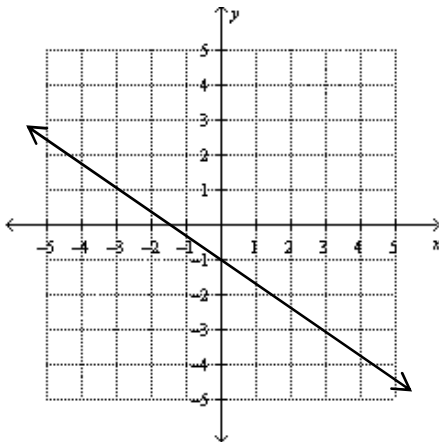

**Graph**



**Equation**

22) The graph and equation represent two different functions.

**FUNCTION 1**



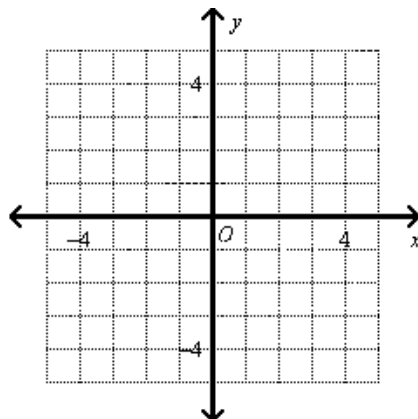
**FUNCTION 2**

X	Y
-6	6
-3	4
0	2
3	0
6	-2

Compare these two functions. (Be sure to discuss what the same is and what is different; include slope and y-intercept)

Graph the inequality.

23)  $y > 1.5x - 3$



24)  $y \leq -2x + 1$

