

## 7.3 Write, Graph, and Analyze Functions Review

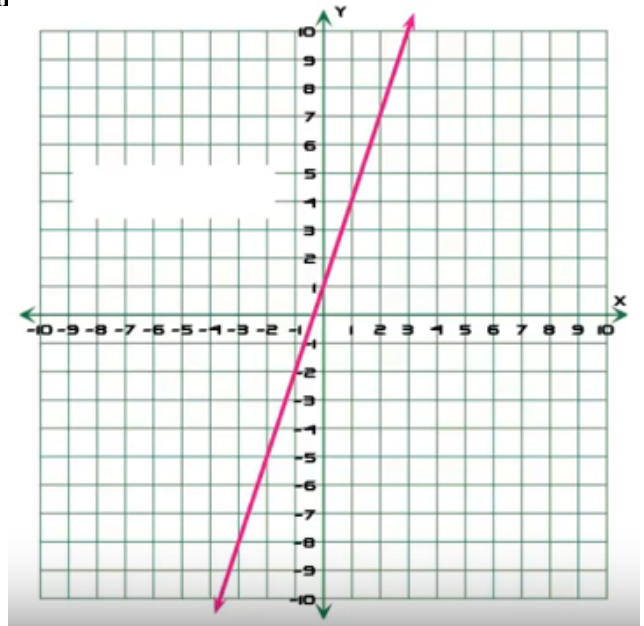
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### NOTES

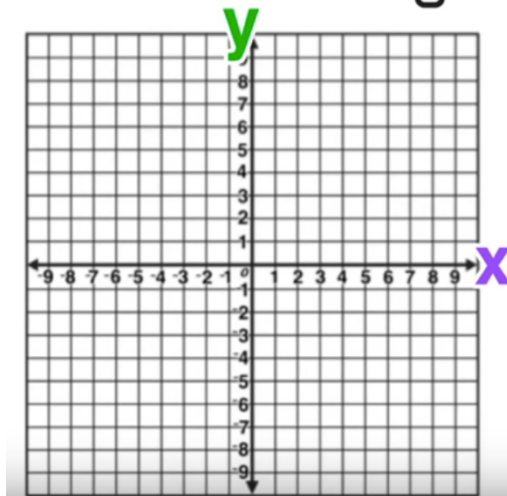
Write your  
questions here!



Write a linear function  $f(x)$  for the line pictured to the right.



### How Do I Graph a Linear Function?



$$f(x) = -\frac{3}{4}x + 2$$

### Function Notation Word Problems

**Try This** Write a linear function. Then solve. *In Function Notation*

- a. Frank's Baby-Sitting Service charges \$3.50 plus \$3.65 per hour. What is the cost of a nine-hour baby-sitting job?

Write your  
questions here!



Solve.

13. A health club charges \$30 for a one-month membership plus \$1.50 for each aerobics class. Find the total cost for a month in which Adam attends 5 aerobics classes.

= (x)

Ex #4: Write an equation for the linear function  $f$  with the given values.

$$f(0) = -2, f(4) = -3$$

You try! Find the equation of the line for the given information.

1)  $f(-2) = -2, f(4) = -8$

2)

x	f(x)
-6	6
-2	4
4	1
10	-2

SUMMARY:

Now,  
summarize  
your notes  
here!

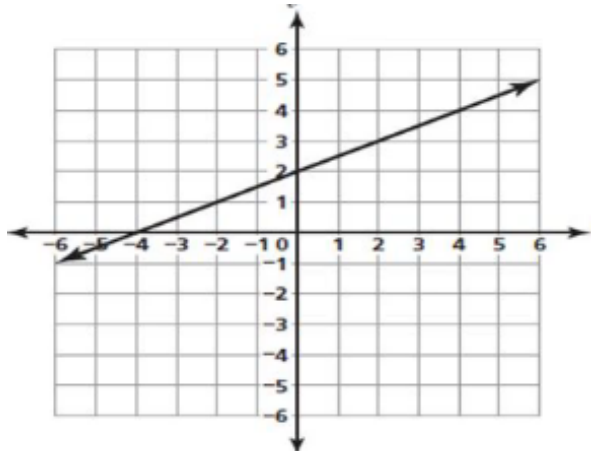


### 7.3 Write, Graph, and Analyze Functions Review Problem Set

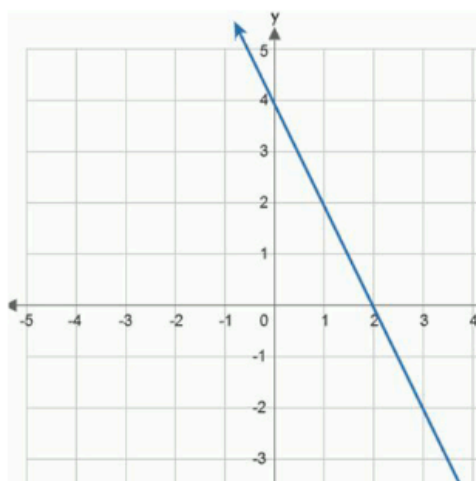
### Problem Set

1. Write function formulas for these lines, using the coordinates of the marked point in your formula.

a.  $f(x) =$  \_\_\_\_\_



b.  $f(x) =$  \_\_\_\_\_



2. Answer these questions about the function  $f(x) = -\frac{5}{2}x + 20$ .

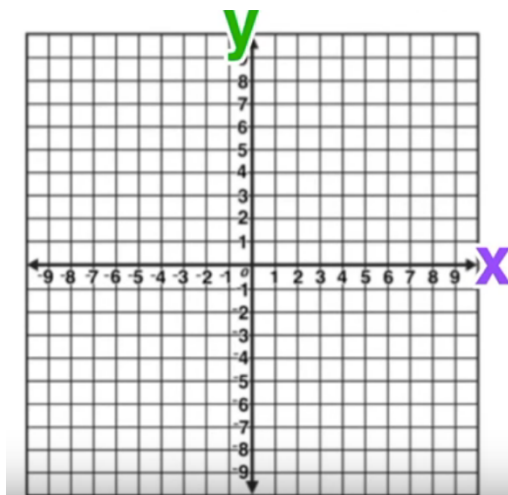
a. Evaluate  $f(4)$ .

b. Solve  $f(x) = 4$ .

c. Find the zero of  $f(x)$ .

d. Find the y-intercept of  $f(x)$ .

e. Graph  $f(x)$  on the grid.



3. Turner is reading a 400-page book. He reads 4 pages every 5 minutes. Write a function describing the number of pages Turner has left to read,  $P(m)$ , after  $m$  minutes of reading. How many minutes does it take Turner to read the entire book?

Let  $m$  = minutes of reading,

$P(m)$  = Number of pages Turner has left to read.

- a. Write a function formula equation for  $P(m)$ .
  - b. Evaluate  $P(15)$ , and explain the meaning of the answer based on the context.
  - c. Find the zero of the function and explain the meaning of the answer based on the context.
4. The cost of food for an honor roll dinner is \$300 plus \$10 per student. Write a function describing the cost of the food,  $C(s)$ , as a function of the number of students,  $s$ .
- a. What does the slope represent?
  - b. Find  $C(s) = 900$ ? What does this mean in the context of the problem?
  - c. What is the y-intercept? What does the y-intercept represent?
  - d. Find the zero of the function? What does it represent?
  - e. What is the cost of food for 50 students? a.k.a Find  $C(50)$ .

5. The number of students in a school has been increasing at a constant rate. The table below represents the number of students in the school for certain numbers of years since 2000.

Let  $t$  = years since 2000

$S(t)$  = Number of students.

<b>Years Since 2000</b>	<b>Number of Students</b>
<b>0</b>	<b>118</b>
<b>5</b>	<b>124</b>
<b>10</b>	<b>130</b>

- a. Write a function for  $S(t)$ .

- b. Assuming the rate of change remains constant, how many students will be in the school in 2015?

- c. Evaluate  $S(30)$ , and explain the meaning of the answer based on the context.

- d. Find  $S(t) = 330$ ? What does this mean in the context of the problem?

6. The cost of a cell phone for one month is a linear function of the number of minutes used. The total cost for 20, 35, and 40 additional minutes is shown in the table below

<b>Number of Additional Minutes</b>	<b>20</b>	<b>35</b>	<b>40</b>
<b>Total Cost</b>	<b>\$48</b>	<b>\$54</b>	<b>\$56</b>

- a. What is the rate of change represented in the data table?

- b. Write a function for cost,  $C(m)$ , in terms of minutes,  $m$ .

- c. What does the  $y$  intercept represent?

- d. What would the monthly cost be if 60 additional minutes were used?

7. Write linear equations using the given information.

a. The table below represents a linear equation. Write a formula for  $f(x)$ .

x	f(x)
5	6
7	6
9	6
11	6

b. The table below represents a linear equation. Write a formula for  $g(x)$ .

x	g(x)
-5	2
-5	4
-5	6
-5	8

8. Write the equation given the following two points on the line  $f(0) = -5$  and  $f(2) = 3$ .

9. Write the equation given the following two points on the line  $f(3) = -4$  and  $f(3) = -4$ .

10. Write the equation given the following two points on the line  $f(-1) = 3$  and  $f(2) = 1$ .

### SKILLS REVIEW

1. What is 20% of 70?	2. 15 is what percent of 65?
3. Write an example equation of a line with zero slope.	4. Write an example equation of a line undefined slope.
5. Evaluate: $4x^3 - 7x^2$ for $x = -3$	6. Solve: $4x + 3 = 2x + 8$
7. Solve: $8 = \frac{x+3}{5}$	8. Convert 125 inches into yards

### Applications

<p>1. What is the solution for x for the equation <math>f(x) = g(x)</math>, when <math>f(x) = 4x - 7</math> and <math>g(x) = 2x + 9</math>?</p> <p>A. -8</p> <p>B. -1/8</p> <p>C. 1/8</p> <p>D. 8</p>	<p>2. Write the equation of the line perpendicular to <math>f(x) = 3</math> that goes through (4, -7).</p> <p>3. Write the equation of the line parallel to <math>f(x) = 3</math> that goes through (4, -7).</p>
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