

**Linear Functions Quiz Review**

**Directions:** Be sure to show all work, communicate your thought process, and justify your reasoning. Remember to check that your answers are complete, correct, and reasonable.

1. To sponsor an endangered animal through a specific organization, one must pay an initial fee, and an additional monthly amount. Since there are only around 3,200 wild tigers left, Tony decided to sponsor a tiger. After three months, Tony paid a total of \$150, and after seven months, Tony paid a total of \$210.

a. Determine the rate of change, and explain what the rate of change represents in context.

b. Write an equation for a function to model the amount of money Tony spends to help save a tiger.

c. Consider the graph of your function. Which holds more value in helping you understand Tony's donations, the x-intercept or the y-intercept, and why? What does this intercept tell you?

d. Evaluate your function for  $x = 4$ . Then evaluate for  $y = 285$ . Explain what each value means in terms of the context.

2. Consider the lines given by the equations. Check off all that have the same slope. Circle all that have the same y-intercept.

$35x - 7y = -80$

$-5x + 5y = 0$

slope: -5 & contains (0,-8)

slope: 5 & contains (3,23)

$x = -8$

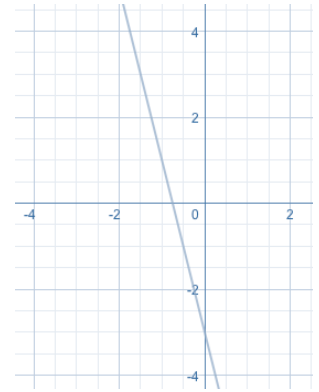
$y = 8$

4. Write the equation for the line passing through each pair of points.

a. (3, 8) and (-8, 3)

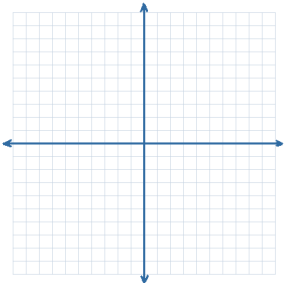
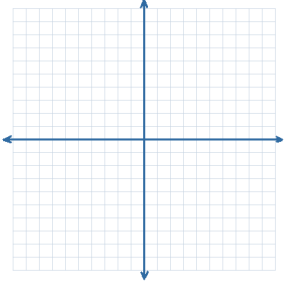
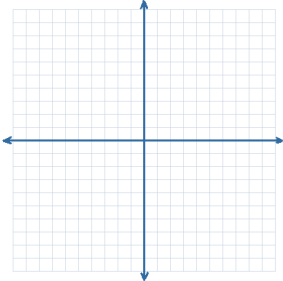
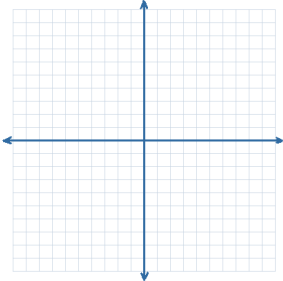
b. (5,-6) and (-4,9)

5. Consider the pictured line. Line K is parallel to the given line and passes through the point (2,-7). Line I is parallel to line K, and passes through the points (0.5,0) and (y+3,y). Line T is perpendicular to line I and passes through the point (8,-5). Line E is perpendicular to line K and passes through the points (4,2) and (x,x - 0.5). Complete each blank:



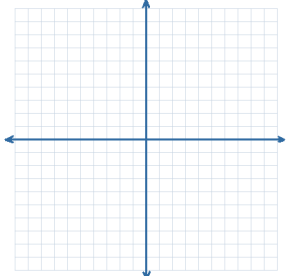
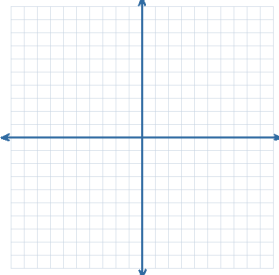
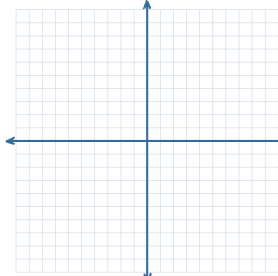
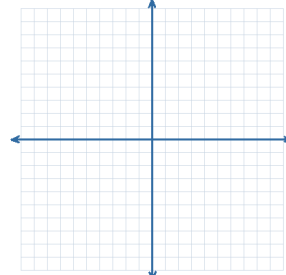
The equation for line K is \_\_\_\_\_, while the equation for line T is \_\_\_\_\_.  
 \_\_\_\_\_ . The value of x is \_\_\_\_\_, and the value of y is \_\_\_\_\_.

6. Graph the line given by each equation. State the domain and range of each. Then circle all of the lines that are not functions.

<p><math>3y = -2x + 9</math></p>  <p>Domain: Range:</p>	<p><math>y = -4</math></p>  <p>Domain: Range:</p>	<p><math>x = 8</math></p>  <p>Domain: Range:</p>	<p><math>9x - 6y = -54</math></p>  <p>Domain: Range:</p>
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Name: \_\_\_\_\_

Date: \_\_\_\_\_

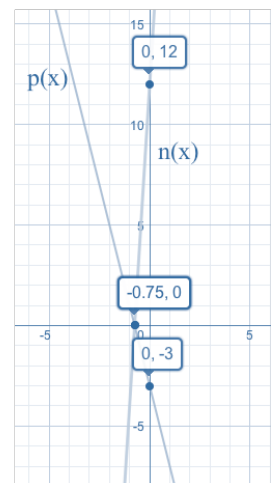
$x = -2$   Domain: Range:	$y = 3$   Domain: Range:	$8y = -2x - 16$   Domain: Range:	$7x - 3y = -21$   Domain: Range:
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7. A taxi charges an initial fee, plus a certain rate per minute. After ten minutes in the taxi, you notice that the meter reads \$8.65, and after 17 minutes, you notice the meter reads \$12.50.

a. Consider the equation of the function that models the cost of the taxi ride. What is the y-intercept, and what does this point represent specifically in terms of the context? Explain.

b. How much money will you owe if you stay in the taxi for exactly one hour?

8.  $p(x) = k * n(x)$ . Which is the value of  $k$ ?



13. Determine  $f(-7)$ ,  $f(0)$ , and  $f(24)$  for each function.

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

b.  $f(x) = -3x + 23$

c.  $f(x) = -\frac{x}{8} - 9$

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★ Additional study strategies:

- create graphic organizers for any concepts we covered in class
- redo previous class work, homework, or review problems
- see me to go over any questions you may have and/or practice further! ☺