

ALEKS® Review Quiz 2 #1

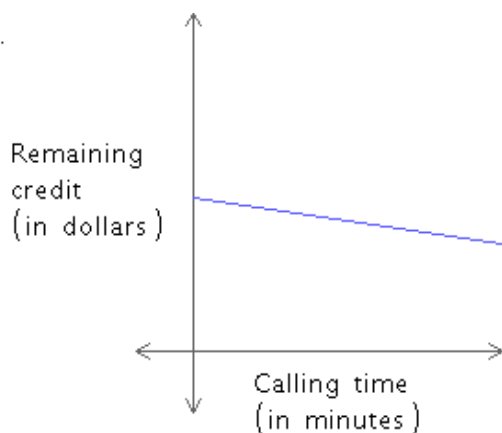
Beginning and Intermediate Algebra Combined / MATH 103 - Fall 2014 – 504 (Prof. Miller)

Student Name/ID:

Instructor Note:

Directions: Every problem is worth two points. One point is for trying the problem and showing your work and one point is for getting the correct answer. There are an additional five points for demonstrating the study strategy that is posted on the board and talked about at the beginning of class.

1. The credit remaining on a phone card (in dollars) is a linear function of the total calling time made with the card (in minutes). The remaining credit after 28 minutes of calls is \$26.64 and the remaining credit after 61 minutes of calls is \$22.68. What is the remaining credit after 67 minutes of calls?



2. Find the x -intercept and y -intercept of the line.

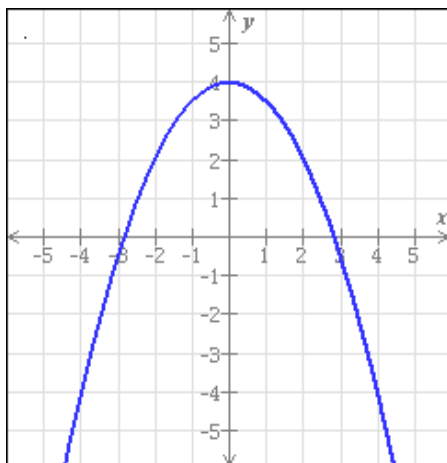
$$6x - 8y = -15$$

x -intercept: _____

y -intercept: _____

3. The graph of a function f is shown below.

Find a value of x for which $f(x) = 4$ and find $f(-2)$



4. The functions f and g are defined as follows.

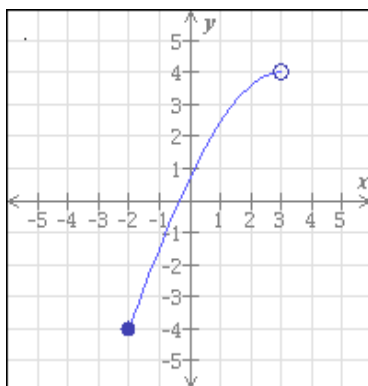
$$f(x) = -3x + 2 \quad g(x) = 3x^3 + 5$$

Find $f(3)$ and $g(-3)$

Simplify your answers as much as possible.

5. The entire graph of the function h is shown in the figure below.

Write the domain and range of h using interval notation.



6. Suppose that the relation T is defined as follows.

$$T = \{ (9, -8), (0, 9), (-7, 4), (-7, -5) \}$$

Give the domain and range of T

Write your answers using set notation.

7. For each relation, decide whether or not it is a function.

<p>Relation 1</p> <table border="0"> <thead> <tr> <th>Domain</th> <th>Range</th> </tr> </thead> <tbody> <tr> <td>desk</td> <td rowspan="4">-8</td> </tr> <tr> <td>paper</td> </tr> <tr> <td>sun</td> </tr> <tr> <td>rock</td> </tr> </tbody> </table> <p> <input type="radio"/> Function <input type="radio"/> Not a Function </p>	Domain	Range	desk	-8	paper	sun	rock	<p>Relation 2</p> <table border="0"> <thead> <tr> <th>Domain</th> <th>Range</th> </tr> </thead> <tbody> <tr> <td>cloud</td> <td rowspan="4">c, s, d</td> </tr> <tr> <td>star</td> </tr> <tr> <td>pencil</td> </tr> <tr> <td>pen</td> </tr> </tbody> </table> <p> <input type="radio"/> Function <input type="radio"/> Not a Function </p>	Domain	Range	cloud	c, s, d	star	pencil	pen
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<p>Relation 3</p> <p>$\{ (-3, -3), (-3, -4), (-3, 9), (-5, 0) \}$</p> <p> <input type="radio"/> Function <input type="radio"/> Not a Function </p>	<p>Relation 4</p> <p>$\{ (k, k), (b, g), (g, k), (g, g) \}$</p> <p> <input type="radio"/> Function <input type="radio"/> Not a Function </p>														

8. The function g is defined by $g(x) = \frac{3x - 4}{x + 5}$

Find $g(x + 5)$

9. Consider the line $y = -\frac{5}{2}x - 6$

- (a) Find the equation of the line that is perpendicular to this line and passes through the point $(-8, 6)$
- (b) Find the equation of the line that is parallel to this line and passes through the point $(-8, 6)$

10. Find the slope and the y -intercept of the line.

$$-3x - 4y = -20$$

Write your answers in simplest form.

11. The functions f and g are defined as follows.

$$f(x) = 2x^3 + 6 \qquad g(x) = -5x - 1$$

Find $f(-3)$ and $g(4)$

Simplify your answers as much as possible.

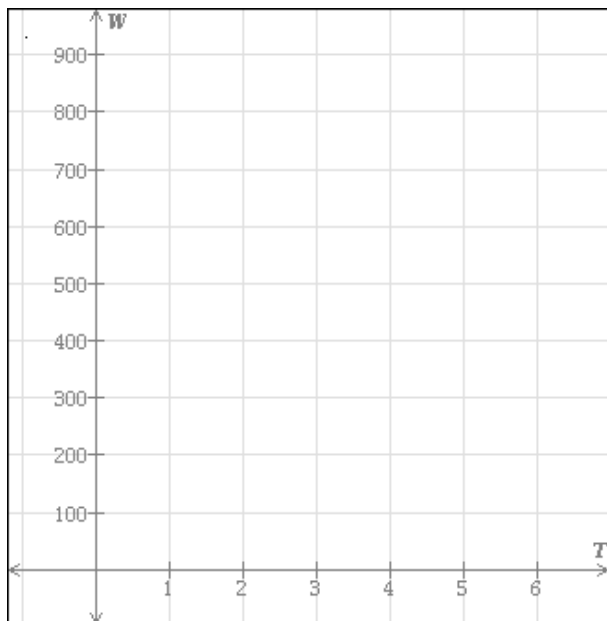
12. Write equations for the horizontal and vertical lines passing through the point $(-8, 1)$

horizontal line:

vertical line:

13. Owners of a recreation area are filling a small pond with water. They are adding water at a rate of 35 liters per minute. There are 700 liters in the pond to start.

Let W represent the amount of water in the pond (in liters), and let T represent the number of minutes that water has been added. Write an equation relating W to T and then graph your equation using the axes below.



14. Consider the line $-9x - 6y = -4$

What is the slope of a line perpendicular to this line?

What is the slope of a line parallel to this line?

15. The function h is defined by $h(x) = \frac{1+2x}{-2+x}$

Find $h(a+4)$

Review Quiz 2 #1 Answers for class Beginning and Intermediate Algebra Combined / MATH 103 - Fall 2014 – 504

1. \$21.96

2. x-intercept: $-\frac{5}{2}$

y-intercept: $\frac{15}{8}$

3. A value of x for which $f(x)=4$: 0
 $f(-2)=2$

4. $f(3) = -7$
 $g(-3) = -76$

5. domain = $[-2, 3)$
 range = $[-4, 4)$

6. domain = $\{9, 0, -7\}$
 range = $\{-8, 9, 4, -5\}$

7.

Relation 1	Relation 2
<div style="display: flex; justify-content: space-between;"> Domain Range </div> <div style="margin-top: 10px;"> <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <p>desk</p> <p>paper</p> <p>sun</p> <p>rock</p> </div> <div style="width: 10%; text-align: center;"> <p>→</p> </div> <div style="width: 40%;"> <p>-8</p> </div> </div> </div> <div style="margin-top: 10px;"> <input type="radio"/> Function <input checked="" type="radio"/> Not a Function </div>	<div style="display: flex; justify-content: space-between;"> Domain Range </div> <div style="margin-top: 10px;"> <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <p>cloud</p> <p>star</p> <p>pencil</p> <p>pen</p> </div> <div style="width: 10%; text-align: center;"> <p>→</p> </div> <div style="width: 40%;"> <p>c</p> <p>s</p> <p>d</p> </div> </div> </div> <div style="margin-top: 10px;"> <input type="radio"/> Function <input checked="" type="radio"/> Not a Function </div>
<div style="text-align: center; padding: 5px;">Relation 3</div> <div style="margin-top: 10px;"> $\{(-3,-3),(-3,-4),(-3,9),(-5,0)\}$ </div> <div style="margin-top: 10px;"> <input type="radio"/> Function <input checked="" type="radio"/> Not a Function </div>	<div style="text-align: center; padding: 5px;">Relation 4</div> <div style="margin-top: 10px;"> $\{(k,k),(b,g),(g,k),(g,g)\}$ </div> <div style="margin-top: 10px;"> <input type="radio"/> Function <input checked="" type="radio"/> Not a Function </div>

8. $g(x+5) = \frac{3x+11}{x+10}$

9. Equation of perpendicular line: $y = \frac{2}{5}x + \frac{46}{5}$

Equation of parallel line: $y = -\frac{5}{2}x - 14$

10. slope: $-\frac{3}{4}$

y-intercept: 5

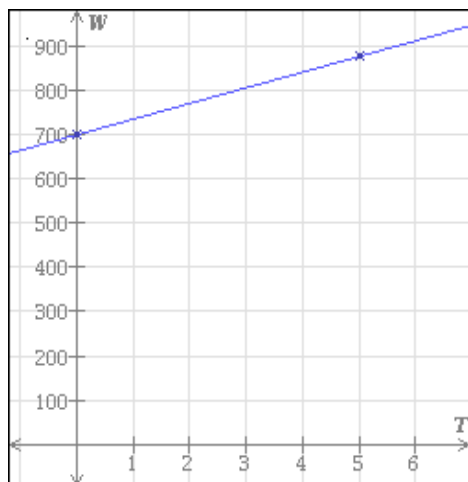
11. $f(-3) = -48$

$g(4) = -21$

12. horizontal line: $y = 1$

vertical line: $x = -8$

13. $W = 700 + 35T$



14. Slope of a perpendicular line: $\frac{2}{3}$

Slope of a parallel line: $-\frac{3}{2}$

15. $h(a+4) = \frac{9+2a}{2+a}$