ALEKS® Lines and Functions Quiz 2 #1

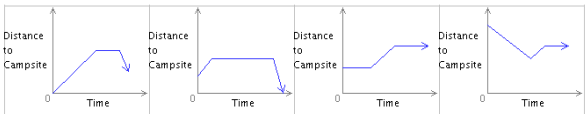
Beginning and Intermediate Algebra Combined / MATH 101 - Fall 2014 – 504 (Prof. Miller)

Student Name/ID:

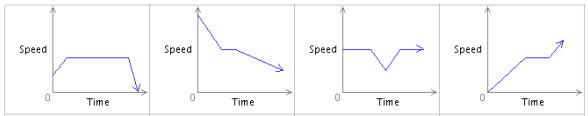
Instructor Note:
Directions: Every problem is worth two points. One point is for trying the problem and showing your work and one point is for getting the correct answer. There are an additional five points for demonstrating the study strategy that is posted on the board and talked about at the beginning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

1. For each scenario below, choose the graph that gives the best representation.

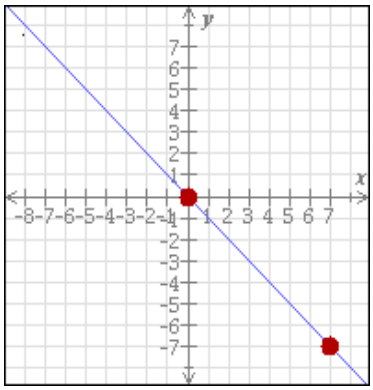
(a) Raina is hiking toward her campsite at a constant pace. A few kilometers from the campsite, she sees a snake and turns and runs the other way. Minutes later, she sits to rest for awhile.



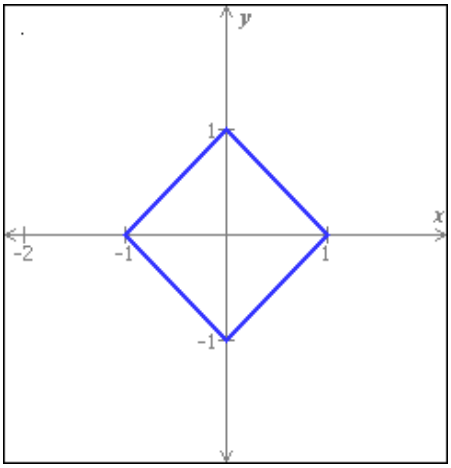
(b) Juan is driving at a constant speed. He then slows down to pass an accident. After passing it, he goes back to his original speed and continues driving at that speed.



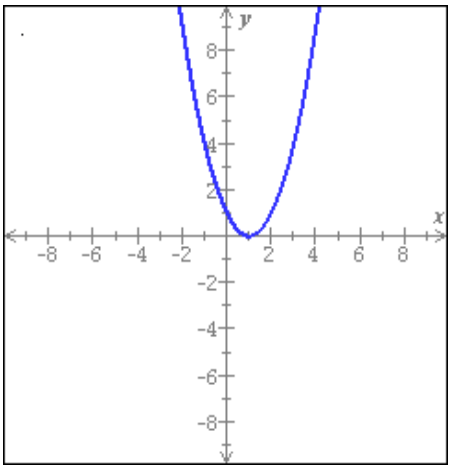
2. Write an equation of the line below.



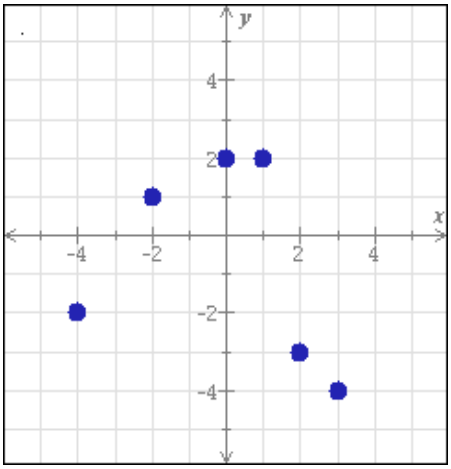
3. For each graph below, state whether it represents a function.



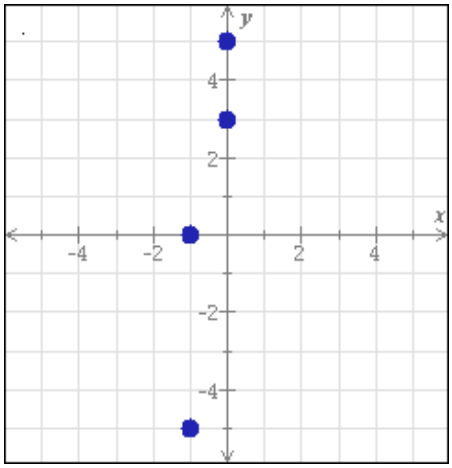
Function?:
Yes No



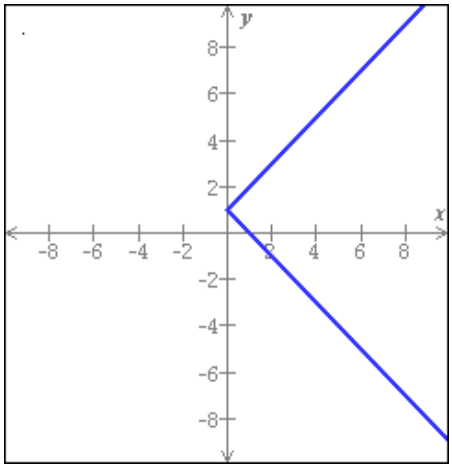
Function?:
Yes No



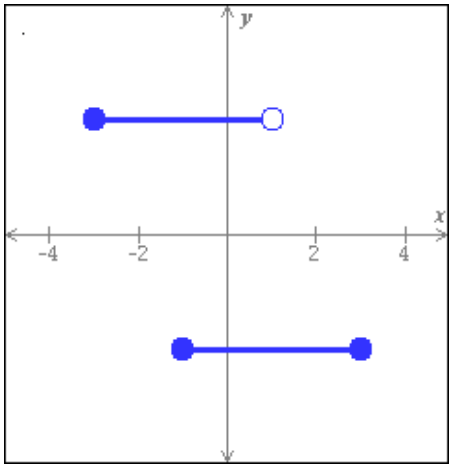
Function?:
Yes No



Function?:
Yes No



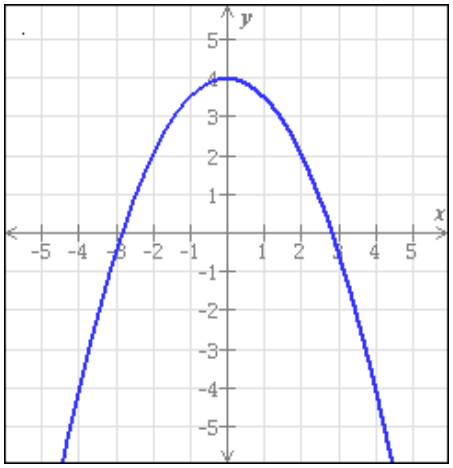
Function?:
Yes No



Function?:
Yes No

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

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

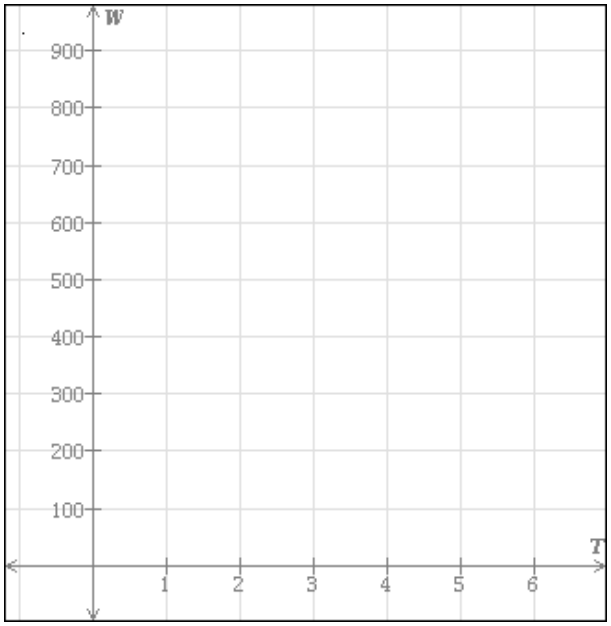


5. The function g is defined by $g(x)=\dfrac{3x-4}{x+5}$

Find $g(x+5)$

6. 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.



7. A line passes through the point $(-4, -1)$ and has a slope of $-\frac{5}{2}$

Write an equation in slope-intercept form for this line.

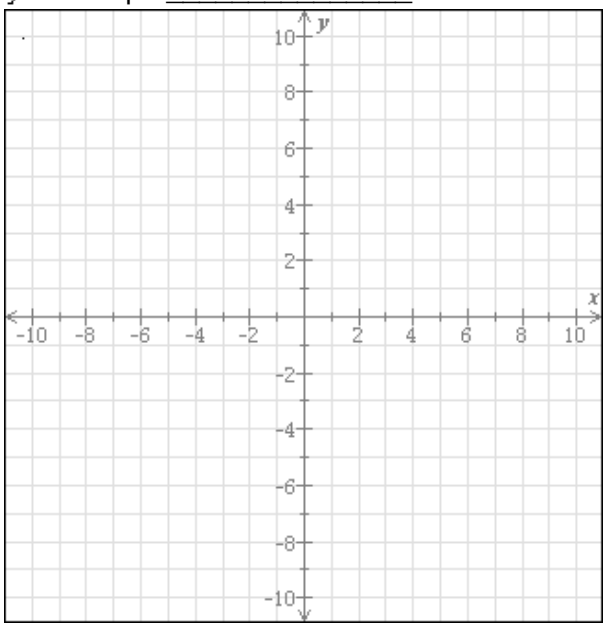
8. The equation of a line is given below.

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

Find the slope and the y-intercept.
Then use them to graph the line.

slope: _____

y-intercept: _____



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

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

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

Simplify your answers as much as possible.

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

horizontal line:

vertical line:

11. 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 $(-8, 6)$

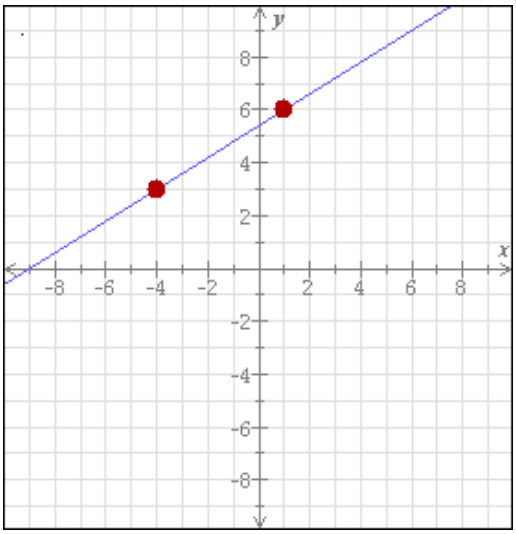
(b) Find the equation of the line that is parallel to this line and passes through the point $(-8, 6)$

12. 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?

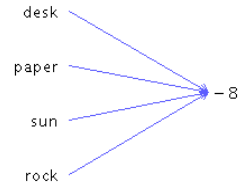
13. Find an equation for the line below.



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

Relation 1

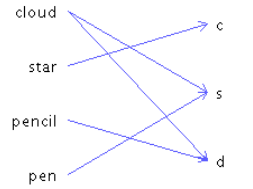
Domain Range



- Function
- Not a Function

Relation 2

Domain Range



- Function
- Not a Function

Relation 3

$\{(-3,-3),(-3,-4),(-3,9),(-5,0)\}$

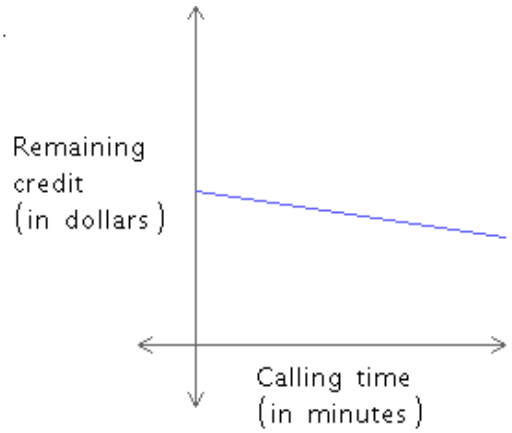
- Function
- Not a Function

Relation 4

$\{(k,k),(b,g),(g,k),(g,g)\}$

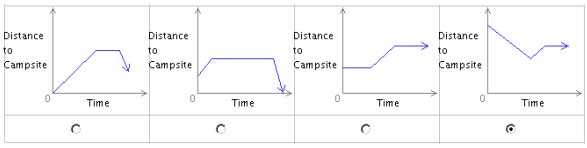
- Function
- Not a Function

15. 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?



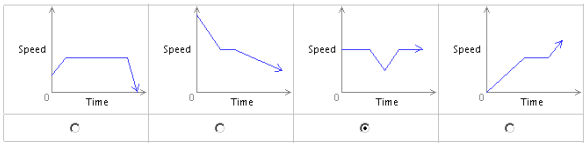
Lines and Functions Quiz 2 #1 Answers for class Beginning and Intermediate Algebra Combined / MATH 101 - Fall 2014 – 504

1. (a) Raina is hiking toward her campsite at a constant pace. A few kilometers from the campsite, she sees a snake and turns and runs the other way. Minutes later, she sits to rest for awhile.



○ ○ ○ ◉

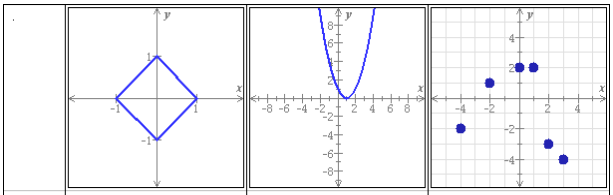
(b) Juan is driving at a constant speed. He then slows down to pass an accident. After passing it, he goes back to his original speed and continues driving at that speed.



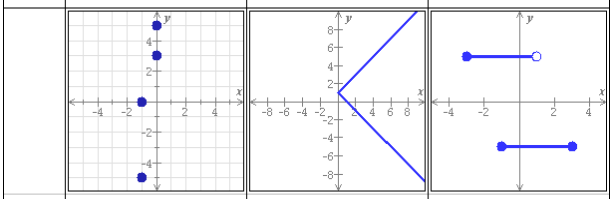
○ ○ ◉ ○

2. $y=-x$

3.



Function? ○ Yes ◉ No | ◉ Yes ○ No | ◉ Yes ○ No



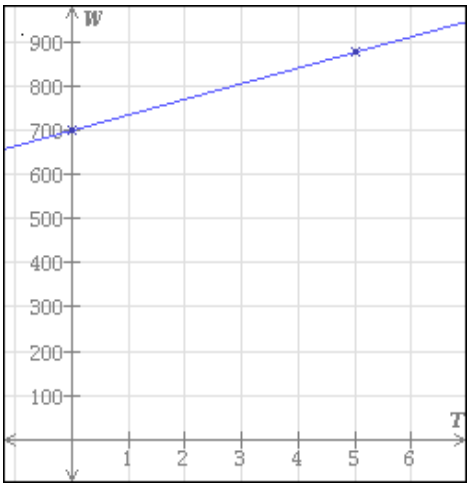
Function? ○ Yes ◉ No | ○ Yes ◉ No | ○ Yes ◉ No

4. One value of x for which $f(x)=4$: 0

$f(-2)=2$

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

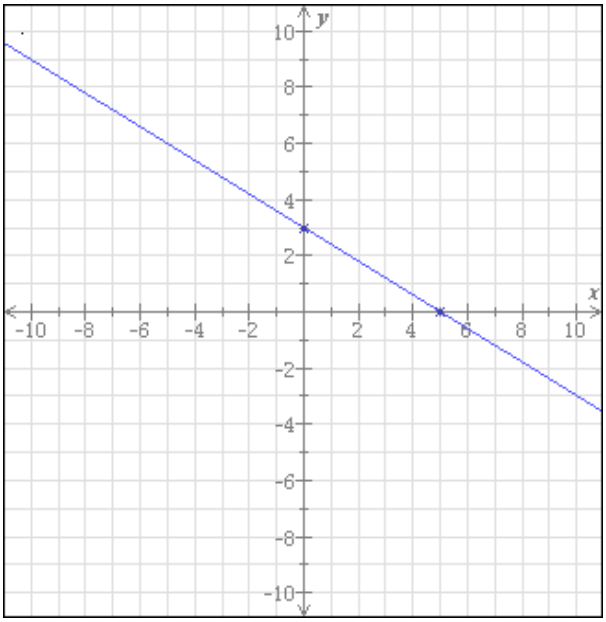
6. $W = 700 + 35T$



7. $y = -\frac{5}{2}x - 11$

8. slope: $-\frac{3}{5}$

y-intercept: 3



9. $f(3) = -7$

$g(-3) = -76$

10. horizontal line: $y = 1$

vertical line: $x = -8$

11.

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

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

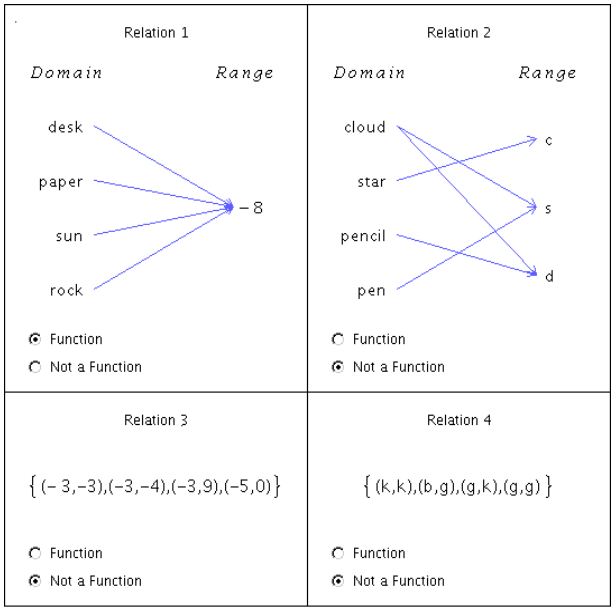
12.

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

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

13. $y=\frac{3}{5}x+\frac{27}{5}$

14.



15. $21.96