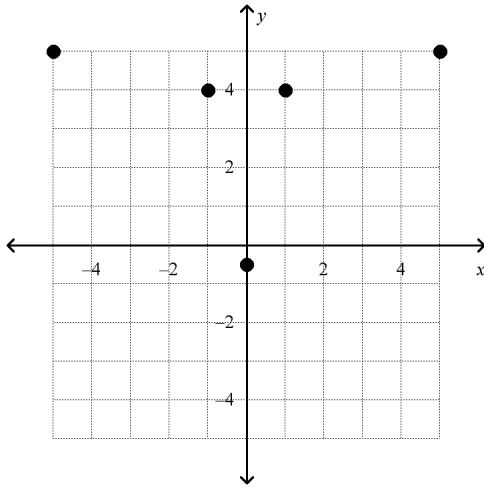# Algebra 2 Function Unit Review

OA.1: I can represent a relation as a table, as a graph, as a math sentence, and in words.

1. (1 point)
   Make a mapping diagram for the relation.
   $\{(-1, -5), (1, 4), (2, -4), (6, 1)\}$

2. (1 point)
   Write the ordered pairs for the relation.

3. (1 point)

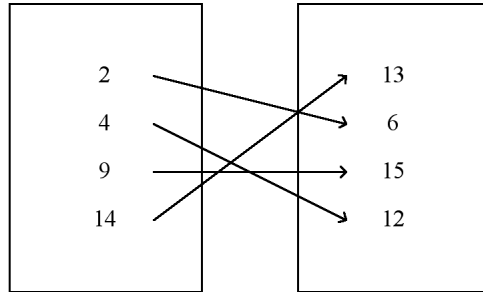Create a table and a graph for the following function. $y = -3x + 2$

4. (1 point)

Express the following table as a mathematical sentence. Describe the relationship between x and y.

x	y
-1	-6
0	0
1	6
2	12

y is compared to x how?

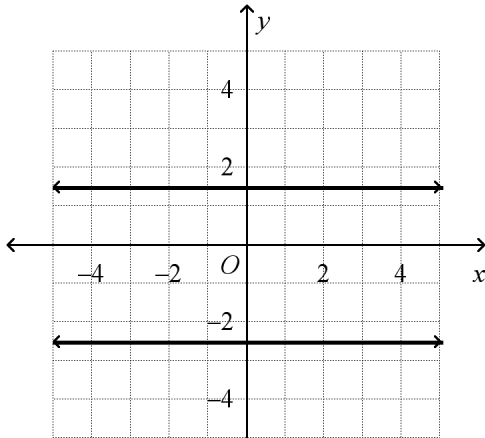**OA.2: I can decide whether a relation is or is not a function.**

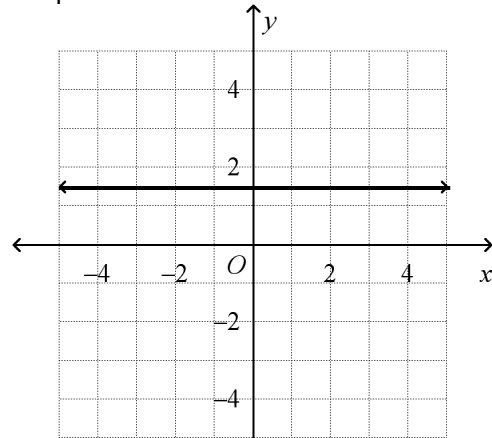_____   5. (1 point)
Is the relation a function?

a.   yes
b.   no

_____   6. (1 point)
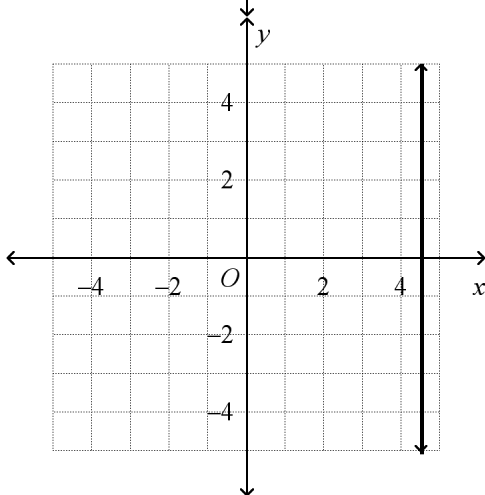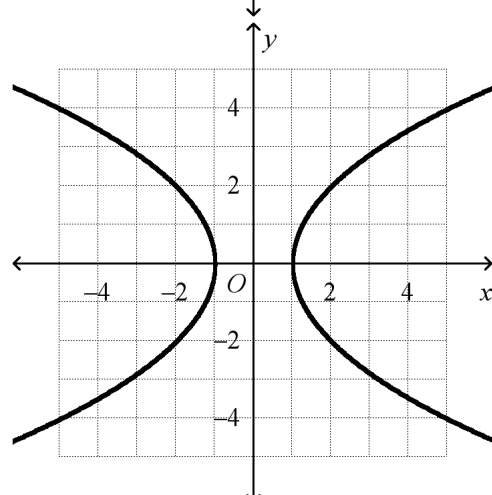Use the vertical-line test to determine which graph represents a function.

a.

c.

b.

d.

_____ 7. (1 point)
Does this relation form a function?
{(14, 15), (5, 7), (3, 10), (11, 1), (5, 8)}

    a. yes
    b. no

OA.3: I can write a function in function notation, identify the independent and dependent variables, and evaluate a function.

8. (1 point)
For $f(x) = 5x + 1$, find $f(-4)$.

_____ 9. (1 point)
Specialty t-shirts are being sold online for $35 plus a one-time handling fee of $1.75. The total cost is a function of the number of t-shirts bought. What function rule models the cost of the t-shirts? Evaluate the function for 6 t-shirts.

    a. $1.75t + 35$; $211.75   c. $1.75t + 35$; $45.5
    b. $35t + 1.75$; $211.75   d. $35t + 1.75$; $45.5

10. (1 point)
For $f(x) = -5x + 1$, find $f(3)$.

11. (1 point)

Below is the information for pricing at Wolfpack pizza. Write an equation in function notation that represents the function below. Identify the independent and dependent variablees, and explain how they are related. Be as specific as possible.

Number of toppings	Total cost
O toppings (Cheese pizza)	$10.00
1	$11.50
2	$13.00
3	$14.50

Graph the relationship once you have answered the above quesitons. Make sure to label your axes.

12. (1 point)

Explain how you know whether a relation is a function. Give some examples to back up your claim.
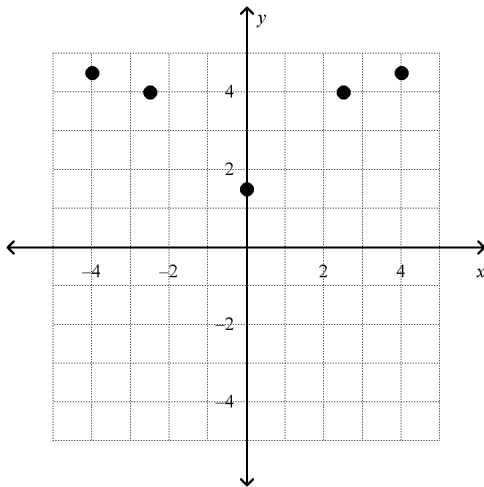
13. (1 point)

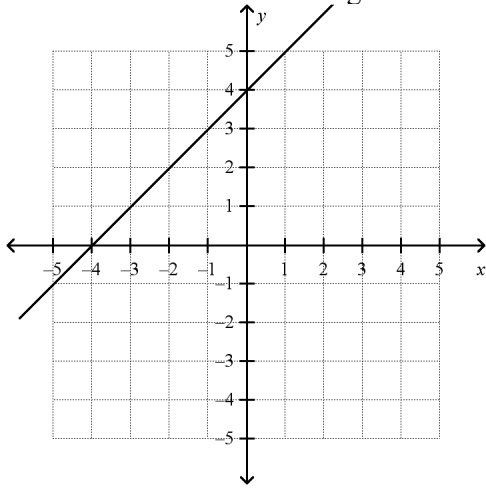If $f(x) = 2x - 4$ and $g(x) = -4x + 3$, what is $f(3) - g(6)$?

14. (1 point)
Explain the difference between $f(3)$ and $f(x) = 13$. Use the function $f(x) = 2x + 7$ to help in your explanation

OA.4: I can identify the domain and range of a function.
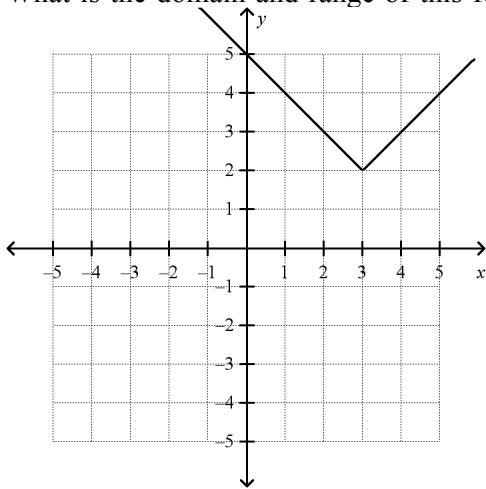
15. (1 point)
Find the domain and range of the relation.

16. (1 point)
    What is the domain and range of this function?

17. (1 point)
    What is the domain and range of this function?

OA.5: I can manipulate a parent function by translating, compressing and reflecting within the coordinate plane.

18. (1 point)
   For each of the following functions describe the transformation that happened from the parent graph. $f(x)$.

   a.) $f(x+4)$
   b.) $-f(x)$
   c.) $f(x)-3$
   d.) $f(-x)$
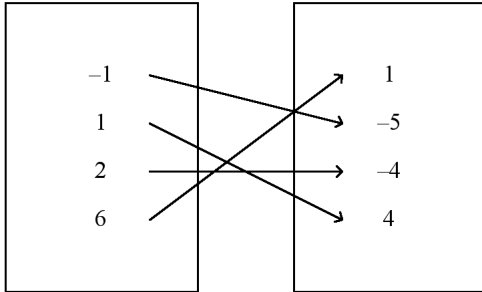   e.) $f(x-2)$
   f.) $f(x)+5$

19. (1 point)
   Put the following graphs in order from skinnest to widest.

   $$f(x) = 3x^3, \quad f(x) = x^3, \quad f(x) = \frac{1}{2}x^3, \quad f(x) = 5x^3$$

Algebra 2 Function Unit Review
Answer Section
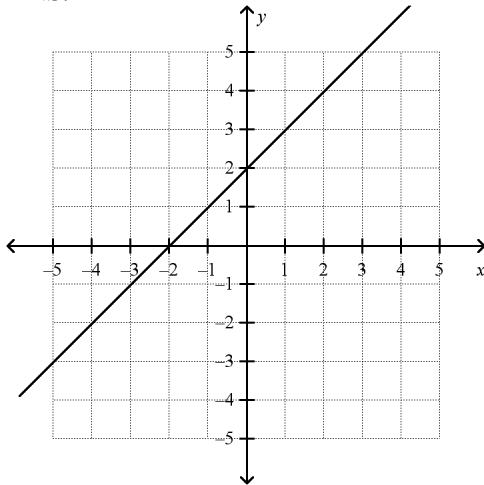
1. ANS:

   PTS: 1
2. ANS:
    {(−5, 5), (−1, 4), (0, −0.5), (1, 4), (5, 5)}

   PTS: 1
3. ANS:

   PTS: 1
4. ANS:
    y is 6 times x.

   PTS: 1
5. ANS: A   PTS: 1
6. ANS: C   PTS: 1
7. ANS: B   PTS: 1

8. ANS:
   -19

   PTS: 1
9. ANS: B   PTS: 1
10. ANS:
   -14

   PTS: 1
11. ANS:
   $c(t) = 1.5t + 10$

   independent: Toppings
   Dependent: Cost

   Every topping adds 1.50 to the price.

   PTS: 1
12. ANS:
   f

   PTS: 1
13. ANS:
   23

   PTS: 1
14. ANS:
   $f(3) = 2(3) + 7 = 6 + 7 = 13$ f(3)
   gives you the domain or the input value. So this means you evaluate the function at 3.

   $13 = 2x + 7$

   $6 = 2x$

   $x = 3$
    f(x)=13 gives you the range or output value. so this means that you solve the function for x.

   PTS: 1
15. ANS:
   domain: {−4, −2.5, 0, 2.5, 4}; range: {4.5, 4, 1.5}

   PTS: 1
16. ANS:
   D: All real numbers
   R: All real numbers

   PTS: 1

2

17. ANS:
    d: all real numbers
    r: all real numbers $y \geq 2$

    PTS: 1
18. ANS:
    a. left 4
    b. reflection in x axis
    c. down 3
    d. reflection in y axis
    e. right 2
    f. up 5

    PTS: 1
19. ANS:
    $f(x) = 5x^3$

    $f(x) = 3x^3$

    $f(x) = x^3$

    $f(x) = \frac{1}{2}x^3$

    PTS: 1