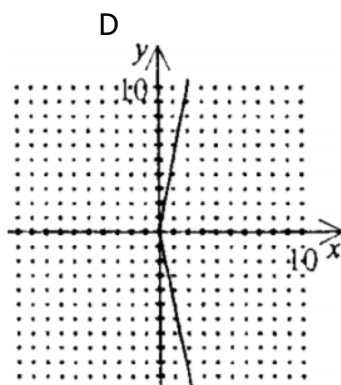
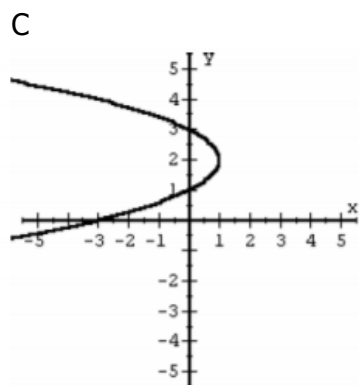
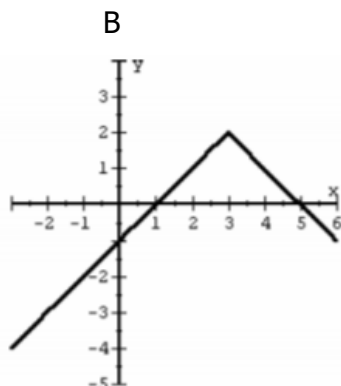
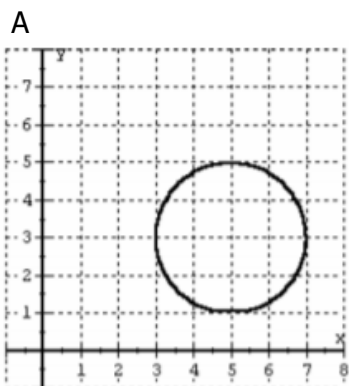


Algebra 1 – Unit 3 Study Packet

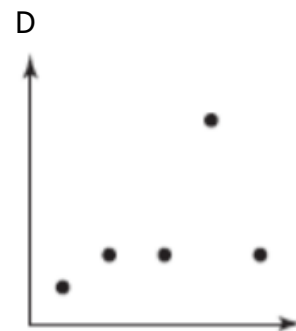
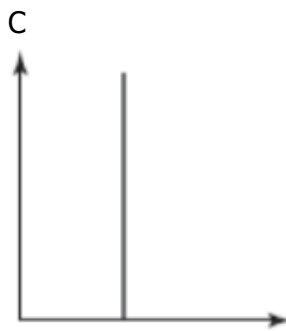
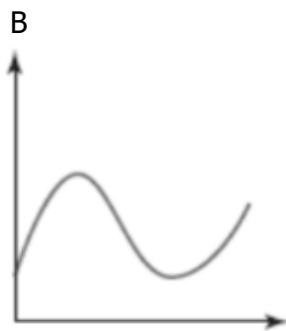
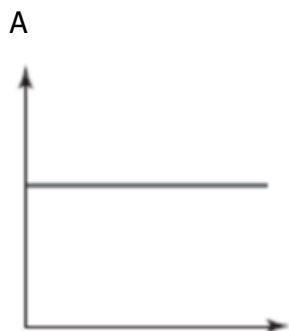
Functions

Skill #1 – Identifying Functions

1. Which graph represents a function?



2. Which of the following is NOT a function of x ?



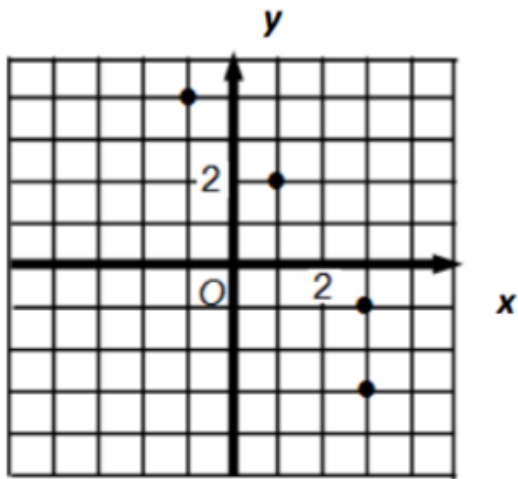
3. Which of the following sets of ordered pairs is a function?

- A $\{(1,2); (2,5); (2,7); (9,11)\}$
- B $\{(-5,-1); (-3,8); (-5,-1); (-3,9)\}$
- C $\{(4,1); (-9,1); (-8,1); (6,1)\}$
- D $\{(6,4); (5,10); (8,-4); (6,-4)\}$

4. Which of following sets of ordered pairs is NOT a function?

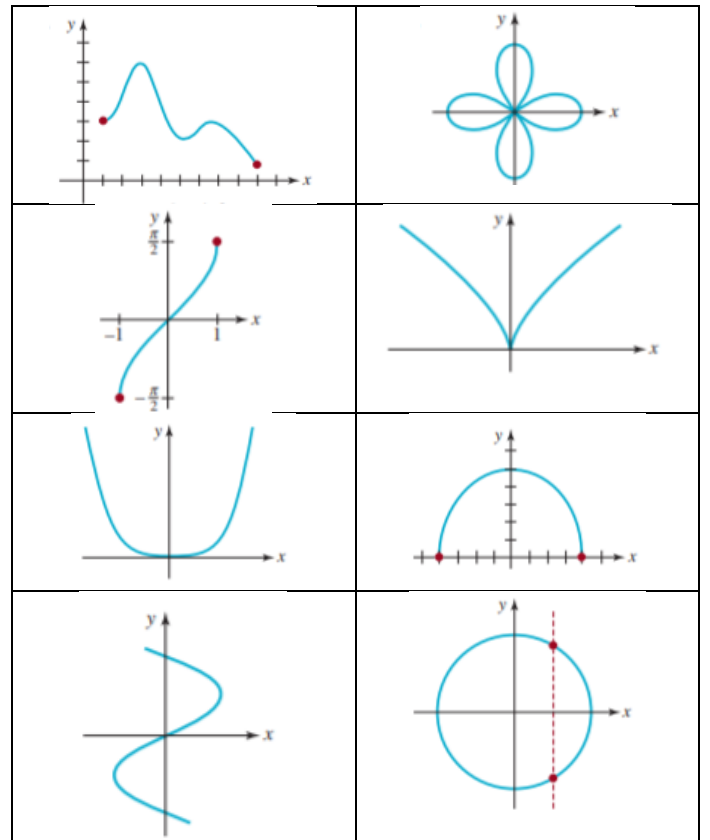
- A $\{(7,2); (7,2); (-1,-6); (-10,-15)\}$
- B $\{(-1,-1); (-3,9); (-1,0); (-7,6)\}$
- C $\{(4,0); (9,0); (5,0); (3,0)\}$
- D $\{(3,7); (8,11); (11,8); (4,-7)\}$

5. Look at the graph of ordered pairs. Identify one of the graphed ordered pairs that make this relation NOT a function.

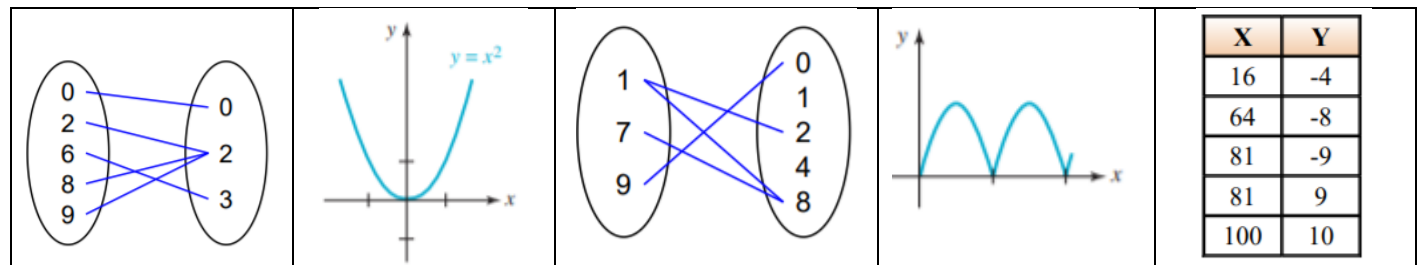


()

6. Select all of the following that are functions.



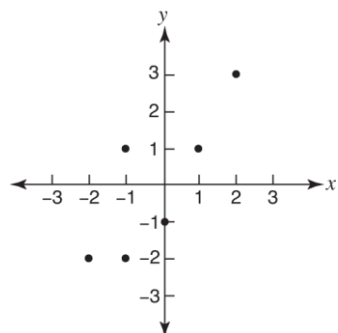
7. Select all of the following that are NOT functions.



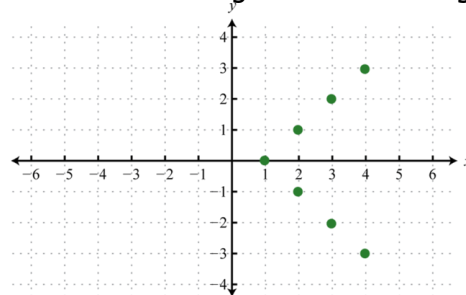
- Skill #1
- I can determine whether a relation, represented by a set of ordered pairs, a table, a mapping, or a graph is a function.
 - Need more practice (IXL – Q.4, Q.5)

Skill #2 – Domain and Range

1. What is the domain of the following function?



2. What is the range of the following function?



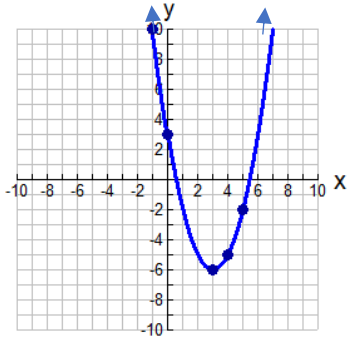
3. What is the domain of the following function?

$$\{(-9,1); (-8,2); (-4,8); (1,21)\}$$

4. What is the range of the following function?

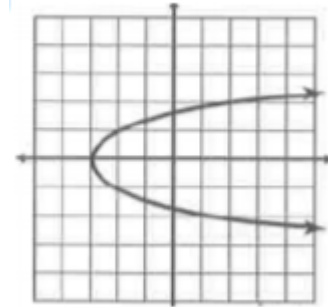
$$\{(7,-1); (8,2); (4,15); (16,23)\}$$

5. Look at the graph of a function. Complete the statement.



$$\{y: y \geq \square\}$$

6. Look at the graph of a function. Complete the statement.



$$\{x: x \geq \square\}$$

Skill #2

I can identify the domain and range presented algebraically or graphically.

Need more practice (IXL – Q.2 or https://www.khanacademy.org/math/algebra/algebra-functions/domain-and-range/e/domain_and_range_0.5)

Skill #3 – Evaluating Functions with Function Notation

1. What is the range of the function $f(x) = x^2 + x - 2$ if the domain is $\{1,2,3\}$?

A $\{0,4,10\}$

B $\{0,3,8\}$

C $\{0,4,7\}$

D $\{0,3,10\}$

2. What is the range of the function $f(x) = -2x + 5$ if the domain is $\{-2,0,2\}$?

A $\{9,5,0\}$

B $\{9,5,1\}$

C $\{-9,5,1\}$

D $\{1,5,0\}$

3. If $f(x) = 4x^3$ what is $f(1)$ and $f(-1)$?

A 4 and 4

B 4 and -4

C 1 and -1

D 12 and -4

4. If $f(x) = (x - 1)^2 + 5x$ what is $f(3)$?

5. If $f(x) = |4x - 1|$ what is $f(-2)$?

6. If $f(x) = \frac{1}{2}x$ what is $f(4)$?

7. Complete the table for the function.

$$f(x) = 2x^3 - x^2$$

x	f(x)
0	
1	
-2	
-1	

8. Complete the table for the function.

$$f(x) = 2(x + 1)^2 + 2x$$

x	f(x)
-4	
2	
0	
1	

9. If $f(4) = 1$ then which could be the equation for $f(x)$?

A $x^2 - x + 3$

B $x^2 - x - 12$

C $x^2 + x + 1$

D $x^2 - x - 11$

9. If $f(-1) = 5$ then which could be the equation for $f(x)$?

A $3x - 5$

B $-4x + 1$

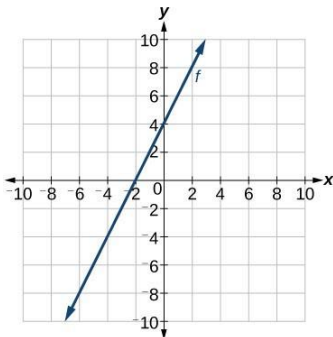
C $5x + 0$

D $-9x - 3$

Skill #3 I can evaluate $f(x)$ for the domain for any value of x .
 Need more practice (IXL – Q.7, Q.8, Q.10)

Skill #4 – Function Representations

1. Identify the table that created this graph.



A

x	y
0	4
-4	-2
-8	-6
-9	-9

B

x	y
-6	-8
-4	-4
0	4
2	8

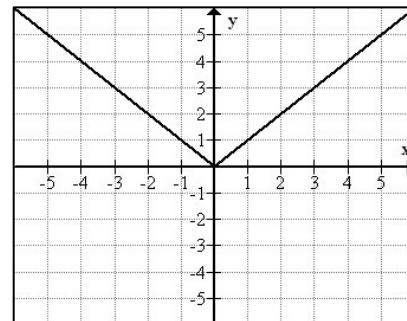
C

x	y
-2	0
-1	-1
0	-2
1	-3

D

x	y
-8	4
-4	3
0	2
4	1

2. Identify the table that created this graph.



A

x	y
0	0
1	1
-1	1
-2	2

B

x	y
0	0
1	1
2	3
-3	4

C

x	y
0	0
1	1
5	6
7	8

D

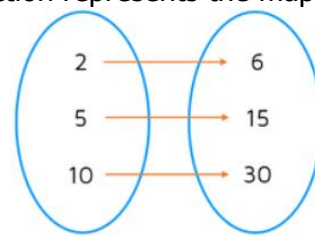
x	y
0	0
-2	-2
1	1
-3	-3

3. Which function represents the ordered pairs?

$\{(-3,11); (-2,7); (-1,3); (0,-1)\}$

- A $4 - x$
- B $3x + 2$
- C $-4x - 1$
- D $x + 4$

4. Which function represents the mapping?



- A $x + 4$
- B $3x$
- C $2x + 2$
- D $4x - 2$

5. Select three representations that refer to the same function.

<table border="1"> <thead> <tr> <th>x</th> <th>f(x)</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>-4</td> </tr> <tr> <td>0</td> <td>-1</td> </tr> <tr> <td>1</td> <td>2</td> </tr> <tr> <td>2</td> <td>5</td> </tr> </tbody> </table>	x	f(x)	-1	-4	0	-1	1	2	2	5	$f(x) = 1 - 2x$	One less than the product of three and a number
x	f(x)											
-1	-4											
0	-1											
1	2											
2	5											
One less than the product of two and a number	<table border="1"> <thead> <tr> <th>x</th> <th>f(x)</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>4</td> </tr> <tr> <td>0</td> <td>5</td> </tr> <tr> <td>1</td> <td>6</td> </tr> <tr> <td>2</td> <td>7</td> </tr> </tbody> </table>	x	f(x)	-1	4	0	5	1	6	2	7	$f(x) = 3x - 1$
x	f(x)											
-1	4											
0	5											
1	6											
2	7											

Skill #4 I can represent relations and functions using verbal descriptions, tables, equations, and graphs. Given one representation, I can represent the relations in other forms.
 Need more practice (IXL - Q.1)