Math Study Guide 8th Grade Unit 4

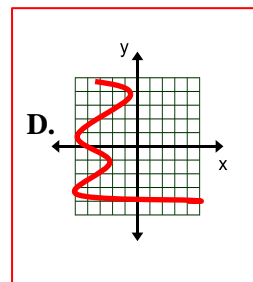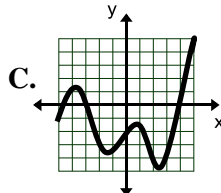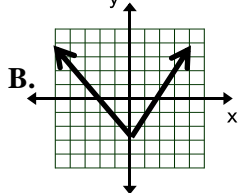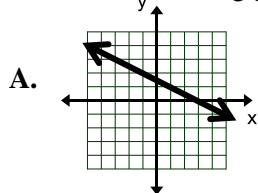1. Which relation is a function? Why?   CC.8.F.1

A. {(-1,3), (-2,6), (0,0), (-2,-2)}   B. {(-2,-2), (0,0), (1,1), (2,2)}
Each input (*x*) has only 1 unique output(*y*). "A" is not a function because the input -2 has 2 outputs: 6 and -2.

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2. Which of the following graphs represents a relation that is NOT a function of *x* ?   CC.8.F.1

A.   **B.**   **C.**   **D.**

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3. Fill in the in the blanks with *always, sometimes, or never*:   CC.8.F.1
   "A relation is _ A. ___*sometimes*___ a function." AND "A function is __ B. __*always*_____a relation."
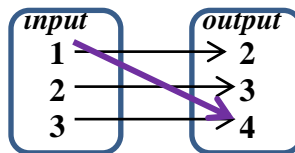
   A. *sometimes*   B. *always*   C. *never*   D. *optional*

CC.8.F.1

4. What error was made in the mapping of these ordered pairs?
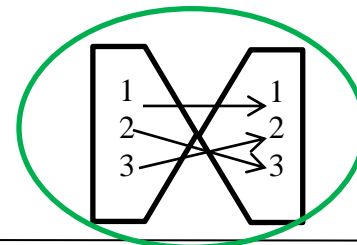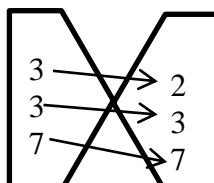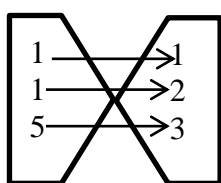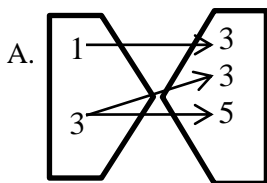
   (1, 2), (1, 4), (2, 3), (3, 4)
   1 should map to both 2 and 4. See picture.

CC.8.F.1

5. Which of the following represents a function?

A.

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6. Which relation is a function?   CC.8.F.1

A

x	y
0	2
1	2
2	2
3	2
4	2

B.

x	y
2	0
2	1
2	2
2	3
2	4

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7. Which relation is a function? *Red coordinates make them not functions.*   CC.8.F.1

A. {(0,0), (1,1), (2,2), (0,3)}   B. {(0,0), (0,1), (0,2), (0,3)}   C. {(0,0), (0,1), (1,0), (0,2)}   D. {(0,0), (2,0), (4,0), (6,-2)}

8. Which table represents **y** as a function of **x** ?

A.

x	y
10	1
20	2
30	3
20	4
10	5

B.

x	y
4	1
4	2
4	3
4	4
4	5

C.

x	y
1	8
2	8
1	9
2	9
3	8

D.

x	y
1	3
2	3
3	3
4	3
5	3

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9. Which of the following graphs represents a relation that is NOT a function of **x** ?   CC.8.F.1

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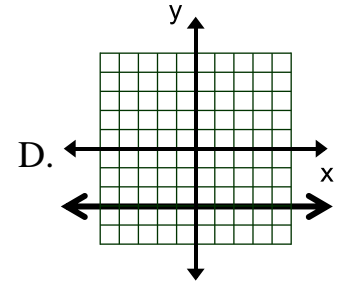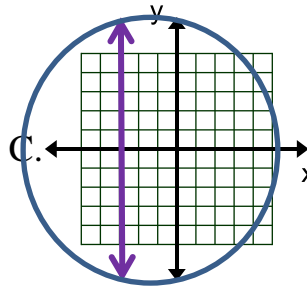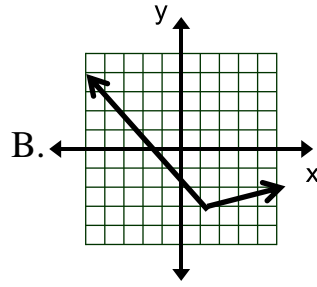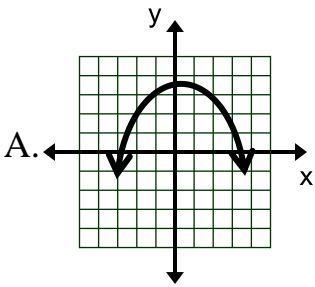
10. You have 11 dolls in December and add dolls each month to your collection. The table shows the number of dolls (**d**) you have each month (**m**) beginning in month one. Which equation can be used to find the total number of dolls(**n**) you have after (**m**) months?

m	d
1	14
2	17
3	20
4	23

CC.8.F.2

A. $d = 3n + 13$ B. $d = 11n + 3$ C. $d = 3n + 11$ D. $d = 13n + 3$

Use the table to answer questions 11 and 12.

Carnival Ride Ticket Price				
Tickets	1	2	3	4
Price ($)	3	4	5	6

11. Which one of the following equations matches the table?   CC.8.F.2
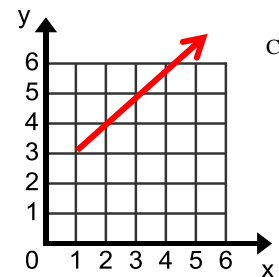A. $y = x + 1$ B. $y = x + 2$ C. $y = 2x$ D. $y = 3x$

12. Draw a graph that represents the pattern shown in the table above.   CC.8.F.2
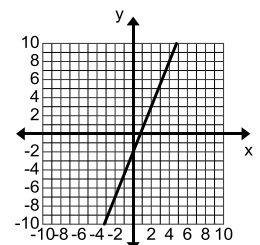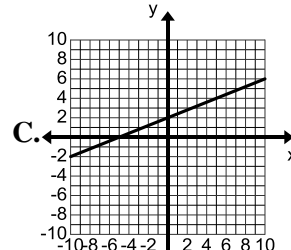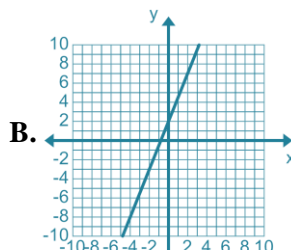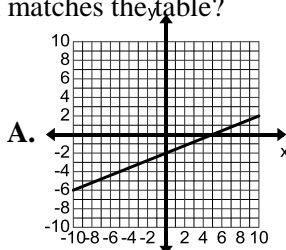(On the test, you will choose which one of the 4 graphs is correct.)

See picture.

CC.8.F.2

13. Which graph matches the table?

TABLE	
x	y
0	2
2	7
4	12
6	17

14. Which equation matches the table ?

A. $t = -2w$ B. $t = -3w$
C. $t = (2w)^2$ **D. $t = w^2$**

w	t
-2	4
0	0
2	4
4	16

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15. Which equation describes the relationship between *x* and *y* ?

A. $y = 2x - 9$ **B. $y = 5x - 3$**

C. $y = 8x - 3$ D. $y = 4x + 1$

x	y
-2	-13
0	-3
2	7
4	17

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16. Which function matches the one in the table?

A. $y = 4x$ B. $y = \frac{1}{2}x$

C. $y = \frac{1}{4}x$ D. $y = 2x$

x	y
4	8
6	12
8	16
10	20

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17. On Friday, your family made a trip to Disney World. The graph
shows the distance you traveled per hour on the way to Disney.
On Tuesday, you drove home and your speed was 10 miles per hour
slower on the trip home. How fast were you traveling on your way
home Sunday?

A. 40 mph   B. 45mph   C. 50 mph   D. 60 mph

The graph shows you were going 50 miles per hour; 10 less than 50 is 40.

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x	y
10	-10
5	-9
0	-8
-5	-7
-10	-6
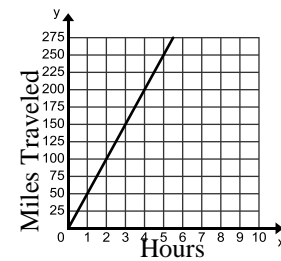
18. Which statement describes the function represented by the table?
    A. As the *x* value increases by 5, the *y* value decreases by 1.
    B. As the *x* value increases by 1, the *y* value increases by 5.
    C. As the *x* value decreases by 1, the *y* value decreases by 5.
    D. As the *x* value decreases by 5, the *y* value increases by 1.

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19. Which statement describes the function represented by the graph?

A. As the *x* value increases by 1, the *y* value increases by 3.
B. As the *x* value increases by 1, the *y* value decreases by 3.
C. As the *x* value increases by 3, the *y* value increases by 1.
D. As the *x* value increases by 3, the *y* value decreases by 1