MAKING CONNECTIONS: SEQUENCES & FUNCTIONS

1. Determine the function that represents the table shown.

x	3	4	5	6	7
f(x)	12	14	16	18	20

_____

Students in a math class recorded how much various weights stretched a slinky. The results are shown in the table.

Weight on the Slinky (grams)	Distance Stretched (mm)
0	0
3	1
9	3
15	5
21	7

2. What is the dependent variable? _____

3. What is the independent variable? _____

4. What does the ordered pair (15, 5) mean for this function?

   _____

5. If this pattern continues, what function would represent this relationship?_____

6. What would be the weight on the slinky if the slinky is stretched 18mm? _____

7. What would the distance the slinky stretched be if the weight is 30 grams? _____

8. Find the algebraic expression that represents the relationship between the terms in the sequence below and its position, n, in the sequence.

4, 1, -2, -5,…

_____

9. Find the algebraic expression that represents the relationship between the terms in the sequence below and its position, n, in the sequence. Find the 15th term in the sequence.

$$3, 8, 13, 18, \ldots$$

Expression: _____   15th Term:_____

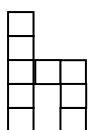**The squares shown in the figures below a pattern.**
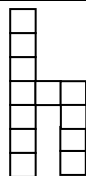
Figure 1

Figure 2

Figure 3

10. Find the expression that could be used to determine the number of squares in the nth figure.

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11. How many squares would there be in the 8th figure?

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12. Which function includes the data set {(2, -2), (6, 10), (13, 31)}?
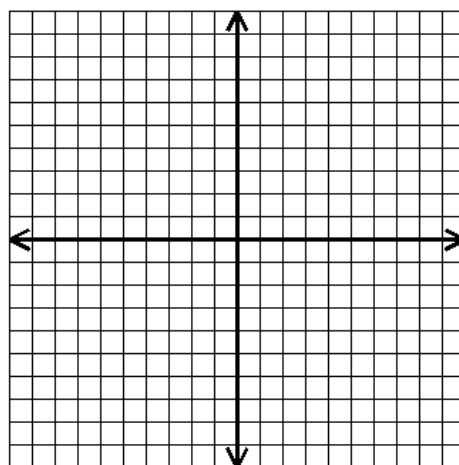
A. $y = \dfrac{1}{2}x - 3$ B. $y = -2x + 2$ C. $y = 3x - 8$ D. $y = 4x - 10$

13. Graph $y = 3x - 4$

Answers in random order except for 2 – 5: $y = 3x - 8$, $-3n + 7$, 73, 10, 27, $3n + 3$, $f(x) = 2x + 6$, $5n - 2$, 54