

TEST NAME: **Independent/Dependent Variables Quiz (6.EE.9)**

TEST ID: **747332**

GRADE: **06 - Sixth Grade**

SUBJECT: **Mathematics**

TEST CATEGORY: **School Assessment**

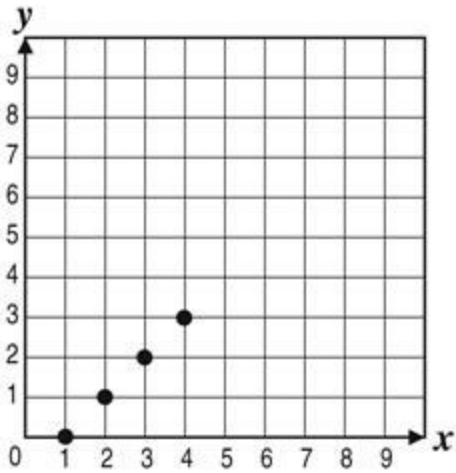
Student: \_\_\_\_\_

Class: \_\_\_\_\_

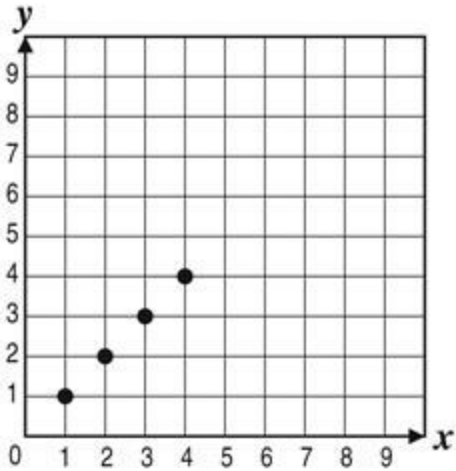
Date: \_\_\_\_\_

1. Sophie used the equation  $y = x + 1$  to represent that the length of a piece of fabric needed for a craft project ( $y$ ) is always 1 inch greater than the length of the object made with the fabric ( $x$ ). Which graph represents four solutions to Sophie's equation?

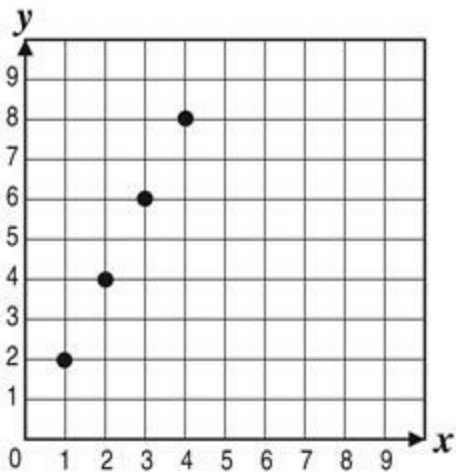
A.



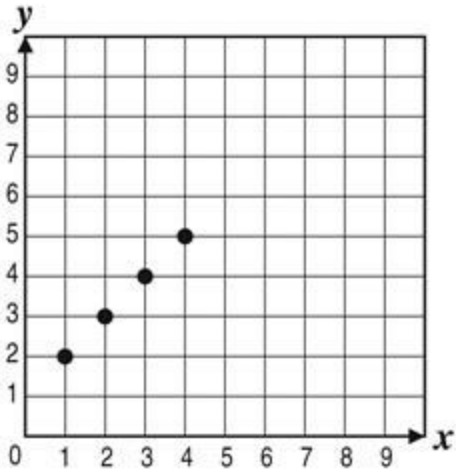
B.



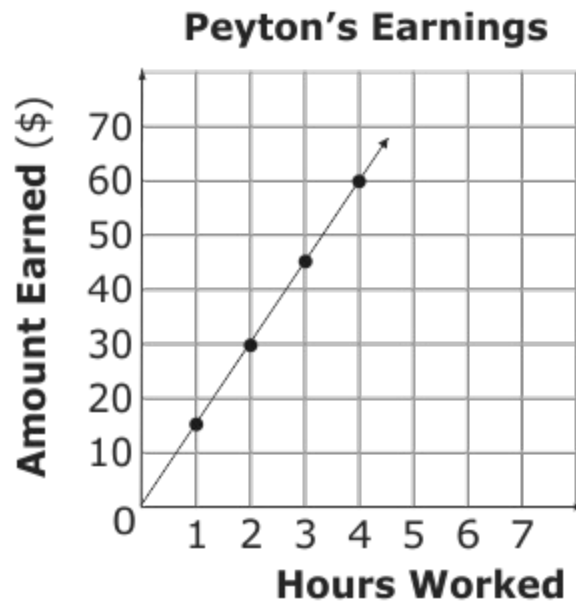
C.



D.



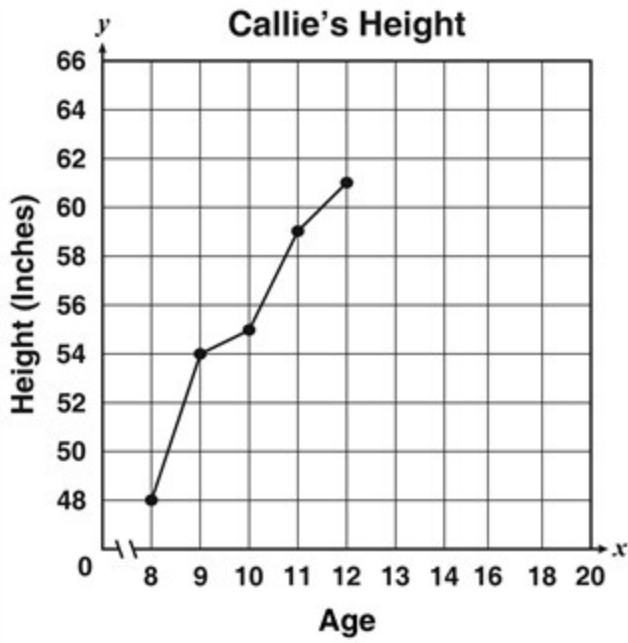
2. Peyton graphed the amount she earns,  $y$ , based on the number of hours she works,  $x$ .



Which equation would calculate the amount Peyton earns after working  $x$  hours?

- A.  $x = 10y$
- B.  $y = 10x$
- C.  $x = 15y$
- D.  $y = 15x$

3. The line graph shows Callie's height from ages 8 to 12.



Which list contains only independent quantities from the graph?

- A. 8, 9, 11, 12
- B. 8, 48, 9, 54
- C. 48, 50, 52, 54
- D. 48, 54, 55, 61

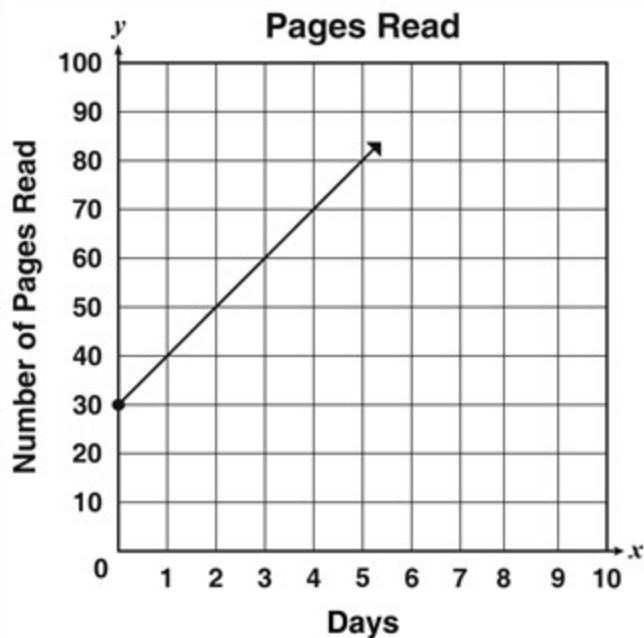
4. Each box contains 6 pens as shown in the table.

# of Boxes	# of Pens
1	6
2	12
3	18
4	24

Which list includes only independent quantities?

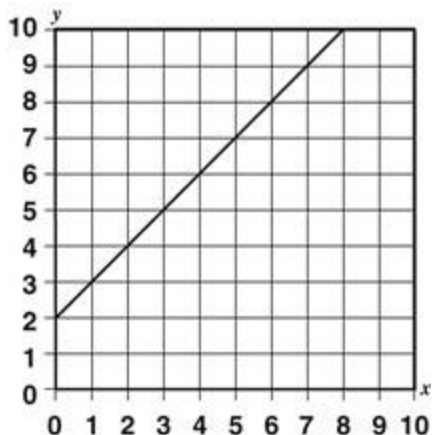
- A. 1, 2, 3, 4
- B. 2, 4, 6, 8
- C. 1, 2, 6, 12
- D. 6, 12, 18, 24

5. Becky started on page 30 of her book of fairy tales. Each night before bed she read 10 pages, as shown in the graph.



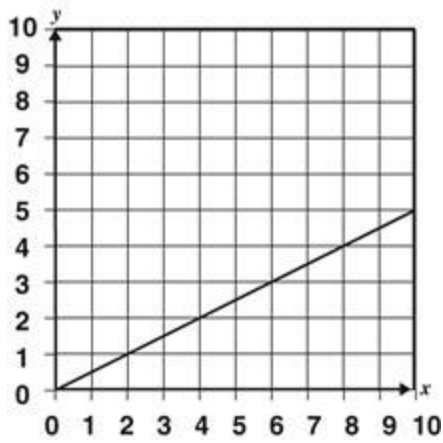
Which value is a dependent quantity?

- A. 2
  - B. 10
  - C. 30
  - D. 70
6. Which statement best describes the relationship between  $x$  and  $y$  in the graph?



- A.  $y$  is twice  $x$ .
- B.  $y$  is one half of  $x$ .
- C.  $y$  is two less than  $x$ .
- D.  $y$  is two more than  $x$ .

7. Which statement best describes the relationship between  $x$  and  $y$  in the graph?



- A.  $y$  is twice  $x$
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- C.  $y$  is two less than  $x$
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8. Lucinda wants to order some books online. The books cost \$15 each, plus \$3 per order for shipping. This table shows what Lucinda's total cost would be, depending on the number of books she orders.

### Books Ordered Online

Number of Books ( $n$ )	Total Cost (dollars)( $c$ )
1	18
2	33
3	48
4	63
5	78

Which equation shows how the number of books,  $n$ , and the total cost,  $c$ , are related?

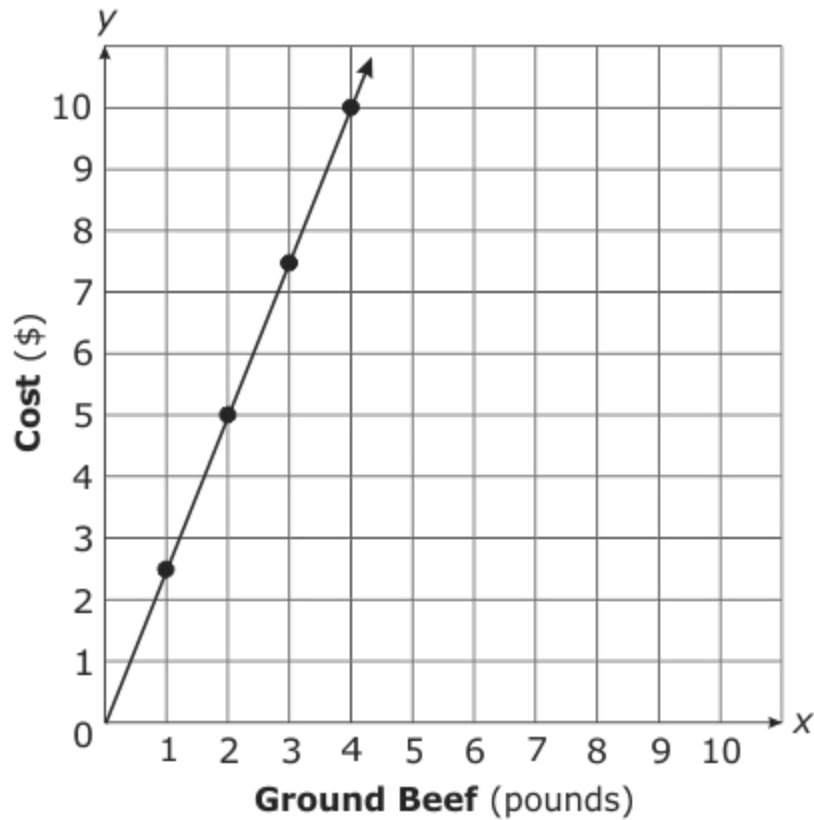
A.  $c = 15n + 3$

B.  $c = 3n + 15$

C.  $c = \frac{15n}{3}$

D.  $c = \frac{3}{15n}$

9. Lindsey created a graph showing the number of pounds of ground beef,  $x$ , and the cost,  $y$ .



Based on the graph, which equation will calculate the cost of  $x$  pounds of ground beef?

- A.  $y = 1.00x$
- B.  $y = 1.00x + 2.50$
- C.  $y = 2.50x$
- D.  $y = 2.50x + 1$



10. A biologist measures the temperature of a lake each week during the summer. This table shows seven weeks of measurements.

Week ( $w$ )	1	2	3	4	5	6	7
Temperature ( $^{\circ}\text{F}$ ) ( $t$ )	66 $^{\circ}$	68 $^{\circ}$	70 $^{\circ}$	72 $^{\circ}$	74 $^{\circ}$	76 $^{\circ}$	78 $^{\circ}$

Which equation can be used to find the temperature,  $t$ , of the lake during these seven weeks,  $w$ ?

- A.  $2t + 64 = w$
- B.  $2t + 66 = w$
- C.  $2w + 64 = t$
- D.  $2w + 66 = t$
11. Alex rides a bicycle at a constant speed. He travels 13 kilometers in 30 minutes.

Part A What is Alex's constant bicycle speed, in kilometers per minute, rounded to the nearest tenth? Show or explain your work.

Part B Write an equation to express the distance Alex travels in terms of time. Use  $d$  to represent distance in kilometers and  $t$  to represent time in minutes.

12. The table below shows the number of pencils brought to school in relation to the number of students.

Number of Students	Total Number of Pencils
1	12
2	24
3	36
4	48
5	60
6	72
7	84
8	96

Part A. Use the data from the table to write an equation that describes the relationship of students and pencils. Define the variables you use.

Part B. Use the equation from part A to find the number of pencils brought in by a classroom of 25 students if every student brought the required number of pencils.

Part C. In the whole school, a total of 2,736 pencils were brought in. How many students attend the school if every student brought in the required number of pencils?

Use words, numbers, and/or pictures to show your work.