

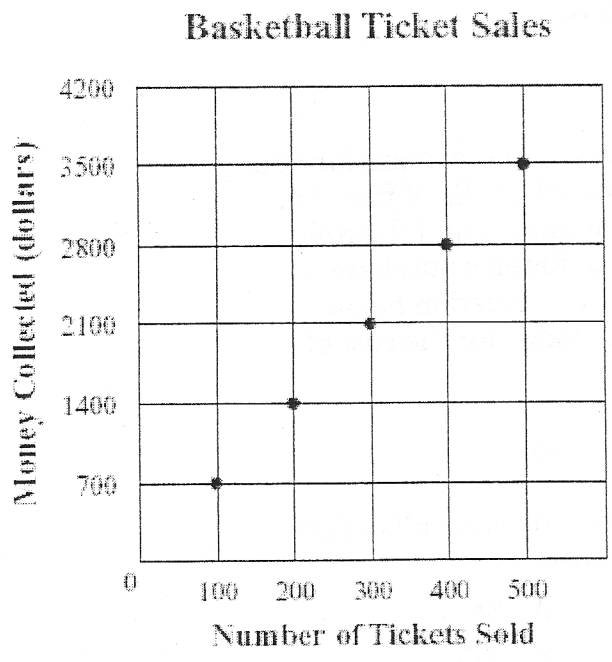
Jill wrote the number pattern shown below.

1, 5, 25, 125, 625, ...

Which of the following could be the rule for determining the next number in Jill's pattern?

- A. add 4
- B. add 20
- C. multiply by 5
- D. multiply by 25

The graph below shows the money collected by selling different numbers of tickets to a college basketball game.



Each ticket is the same price. Based on the data in the graph, what is the price of 1 ticket to the basketball game?

- A. \$7
- B. \$10
- C. \$17
- D. \$70

Julius copied the equation shown below from a study guide.

$$\frac{\Delta}{6} = 11$$

For this equation to be true, which of the following equations must also be true?

- A. $\Delta = 11 - 6$
- B. $\Delta = 11 + 6$
- C. $\Delta = 11 \div 6$
- D. $\Delta = 11 \times 6$

Harry made the input-output table shown below.

Input(x)	Output(y)
3	8
4	10
5	12
6	14

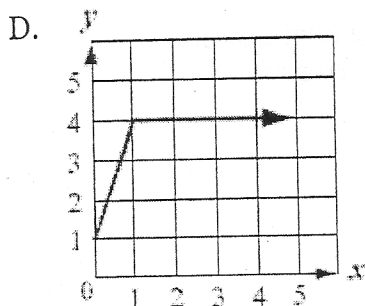
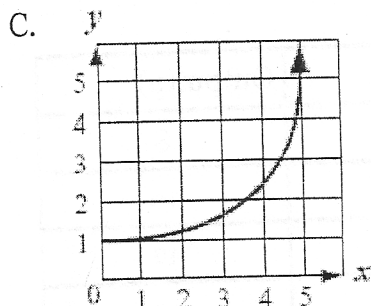
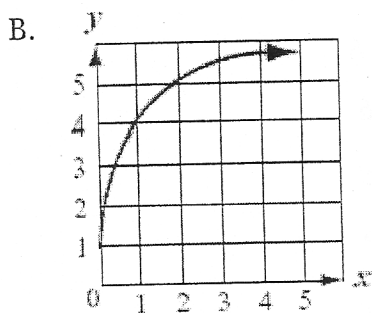
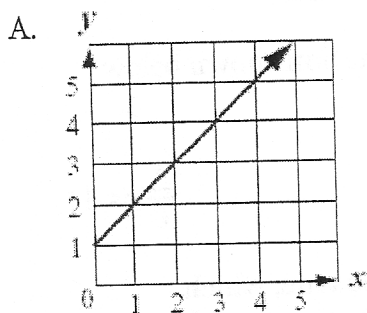
Which of the following expressions is true for all values in Harry's input-output table?

- A. $x + 5 = y$
- B. $x + 6 = y$
- C. $2x + 2 = y$
- D. $3x - 1 = y$

A carton contains 12 eggs. Which of the following expressions represents the total number of eggs that are contained in c cartons?

- A. $c - 12$
- B. $c + 12$
- C. $c \div 12$
- D. $c \times 12$

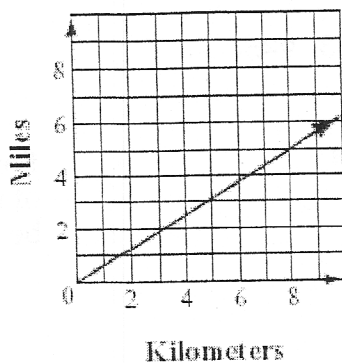
Which of the following graphs shows constant rate of change between the variables x and y ?



8

The graph below shows the relationship between distance measured in kilometers and distance measured in miles.

Measures of Distance



Which of the following is closest to the number of miles that is equivalent to 4 kilometers?

- A. 1.5 miles
- B. 2.5 miles
- C. 5.8 miles
- D. 6.2 miles

9

Karen purchased a new camera for \$60. She also purchased 5 rolls of film. The total cost of the camera and the rolls of film was \$90. Karen's purchase is represented by the equation below. In the equation, f stands for the cost of each roll of film.

$$5f + 60 = 90$$

What was the cost of each roll of film that Karen purchased?

- A. \$6
- B. \$12
- C. \$18
- D. \$30

7

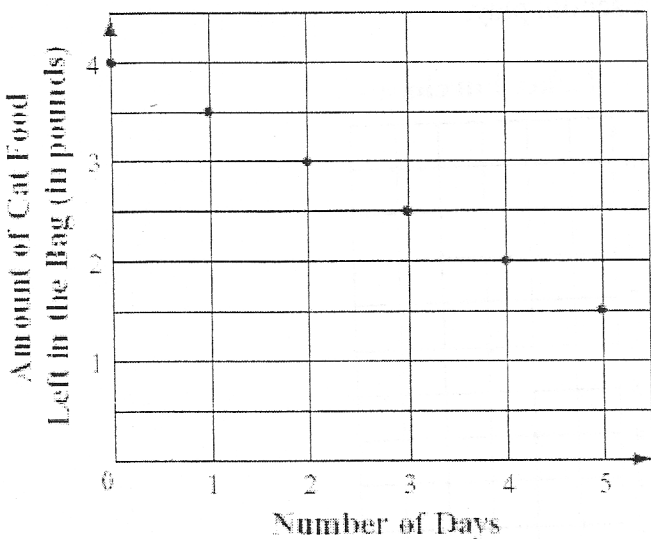
What values of Δ and \square make **both** equations below true?

$$\begin{aligned} \Delta + 12 &= 21 \\ \Delta + \square &= 16 \end{aligned}$$

- A. $\Delta = 8$ and $\square = 8$
- B. $\Delta = 9$ and $\square = 7$
- C. $\Delta = 9$ and $\square = 8$
- D. $\Delta = 9$ and $\square = 6$

Michael bought a 4-pound bag of cat food. He fed his cat the same amount of food from the bag each day, as shown in the graph below.

Michael's Bag of Cat Food



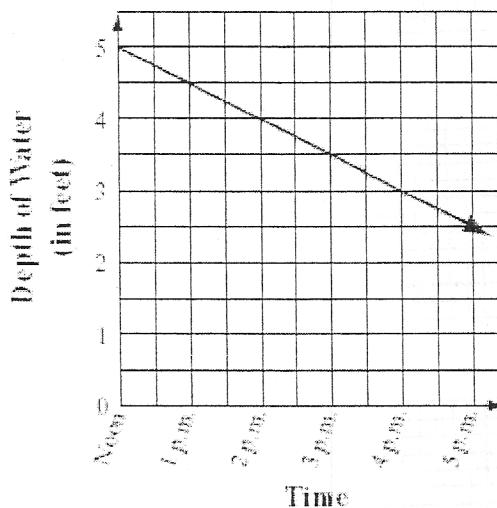
What amount of food from the bag did Michael feed his cat each day?

- A. $\frac{1}{4}$ pound
- B. $\frac{1}{2}$ pound
- C. 1 pound
- D. 2 pounds

12

The depth of the water in a tank was 5 feet. At noon, Haley started draining water out of the tank at a steady rate, as shown by the graph below.

Water in Tank



Based on the rate shown by the graph, at what time will the depth of the water in the tank be 2 feet?

- A. 2 p.m.
- B. 4 p.m.
- C. 6 p.m.
- D. 8 p.m.

11
What is the solution to the equation below?

$$\frac{y}{-7} = 21$$

- A. $y = -3$
- B. $y = 3$
- C. $y = 147$
- D. $y = -147$

13

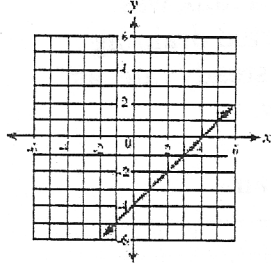
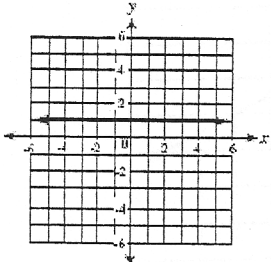
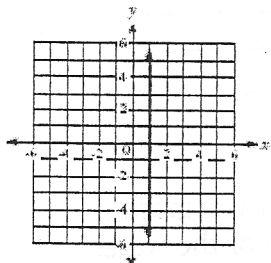
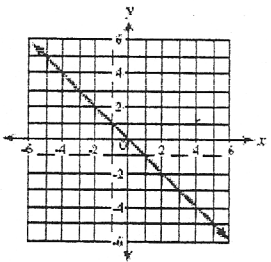
Which of the following is represented by the expression below?

$$5x + 2$$

- A. two more than $\frac{1}{5}$ of a number
- B. two more than five times a number
- C. five more than $\frac{1}{2}$ of a number
- D. five more than twice a number

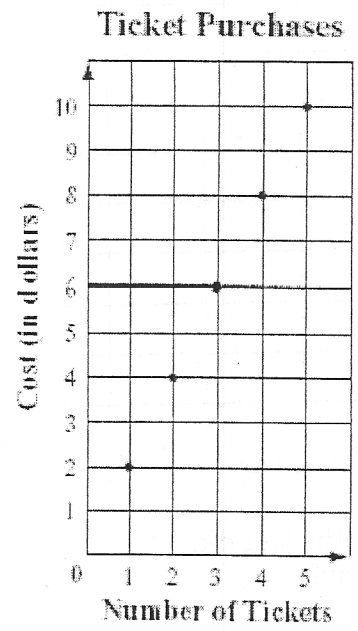
14

Which of the following shows the graph of a line with positive slope?

- A. 
- B. 
- C. 
- D. 

16

The graph below represents the cost of purchasing different numbers of tickets to a school play.



As the number of tickets purchased increases by 1, how does the cost of the ticket purchase change?

- A. It increases by \$0.50.
- B. It increases by \$1.00.
- C. It increases by \$2.00.
- D. It increases by \$4.00.

15

The cost of using Expert Internet Service is a one-time fee of \$25 plus a monthly fee of \$10. The expression below represents the total cost of using this Internet service for m months.

$$25 + 10m$$

What is the total cost of using Expert Internet Service for 8 months?

- A. \$105
- B. \$133
- C. \$250
- D. \$280

17

What is the solution to the equation shown below?

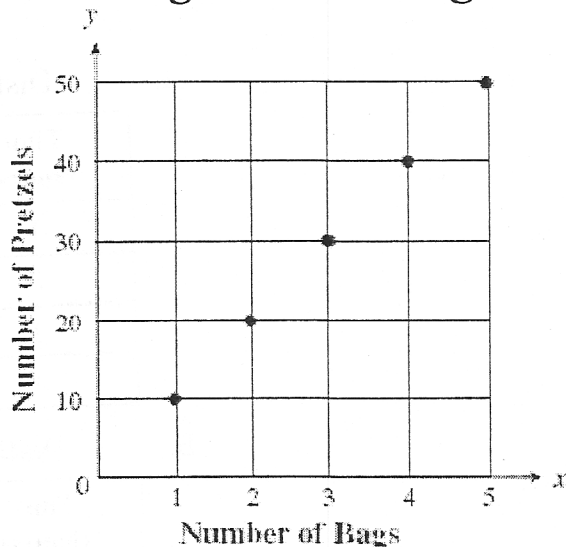
$$2x - 4 = 12$$

- A. $x = 4$
- B. $x = 8$
- C. $x = 12$
- D. $x = 16$

18

Jared bought bags of large pretzels at the food store. The graph below represents the relationship between the number of bags he bought and the total number of pretzels in the bags.

Total Number of Pretzels in Bags Jared Bought



Based on the graph, what is the relationship between the number of bags and the total number of pretzels in the bags?

- A. Total Number of Pretzels = $10 \times$ Number of Bags
- B. Total Number of Pretzels = $10 +$ Number of Bags
- C. Total Number of Pretzels = $10 -$ Number of Bags
- D. Total Number of Pretzels = $10 \div$ Number of Bags

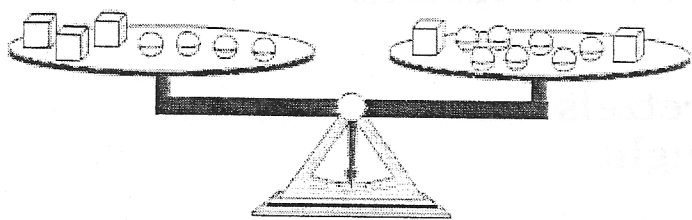
19

Which of the following statements describes a correct method for solving the equation below?

$$20 + 2w = 50$$

- A. Add 20 to both sides of the equation, and then divide both sides by 2.
- B. Subtract 20 from both sides of the equation, and then divide both sides by 2.
- C. Divide both sides of the equation by 2, and then add 20 to both sides.
- D. Divide both sides of the equation by 2, and then subtract 20 from both sides.

20 The scale shown below is balanced.



Which of the following will balance one ?

- A. ○○○○
- B. ○○○○○
- C. ○○○○○○○
- D. ○○○○○○○○○

21 The cost for labor at a car repair center is shown in the table below.

Car Repair Costs

Hours	Total Cost
1	\$ 60
2	\$120
3	\$180
4	\$240

Based on the data in the table, which of the following expressions represents the total cost, in dollars, of a repair that requires h hours of labor?

- A. $h + 60$
- B. $h - 60$
- C. $h \times 60$
- D. $h \div 60$

22

In which of the following tables do the data show a constant rate of change in the total distance traveled during a four-hour trip?

A. **Distance Traveled**

Time (hours)	Total Distance (miles)
1	50
2	80
3	140
4	230

B. **Distance Traveled**

Time (hours)	Total Distance (miles)
1	30
2	60
3	120
4	240

C. **Distance Traveled**

Time (hours)	Total Distance (miles)
1	60
2	120
3	150
4	165

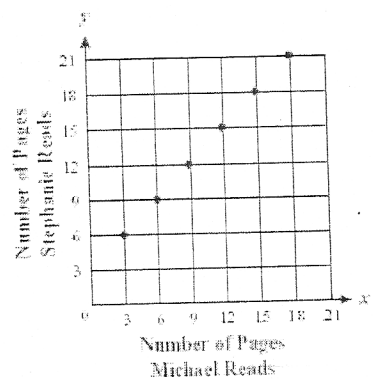
D. **Distance Traveled**

Time (hours)	Total Distance (miles)
1	50
2	100
3	150
4	200

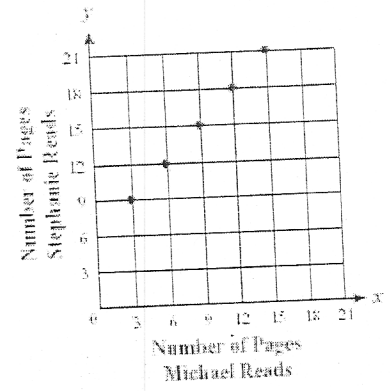
23

Each night, Stephanie reads 3 more pages of her book than Michael reads of his book. Which of the following graphs correctly represents the relationship between the number of pages Stephanie reads each night and the number of pages Michael reads each night?

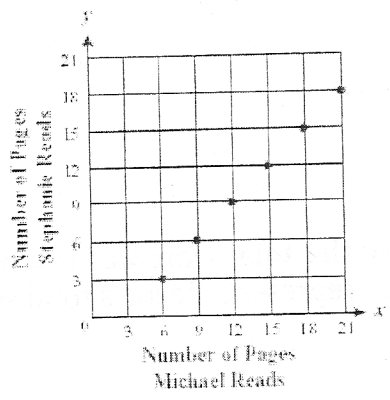
A. Pages Read Each Night



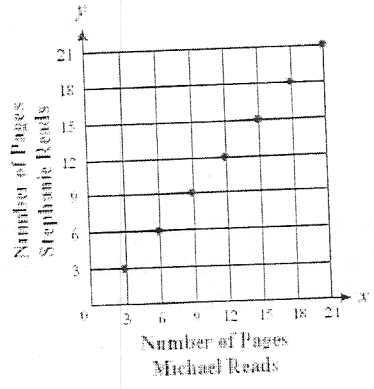
C. Pages Read Each Night



B. Pages Read Each Night



D. Pages Read Each Night



24) What is the value of the expression below when $\square = 12$?

$$\frac{\square}{4} + 6$$

25) Write a rule that describes the relationship between the input (x) and the output (y) in the input-output table below.

Input (x)	2	5	10	11
Output (y)	5	11	21	23

26) Based on the pattern in the input-output table below, what is the value of y when $x = 4$?

Input (x)	Output (y)
1	7
2	14
3	21
4	?

27) What is the value of x that makes the equation below true?

$$2x - 3 = 11$$

28) Sarah and Jacob compared their total bowling scores. Sarah's total score was 109 points greater than Jacob's total score. Write an expression that represents Jacob's total score based on S , Sarah's total score.

29) Laila is having shirts made with a logo printed on them to promote her band. The total cost consists of a one-time fee of \$75 to have the logo designed plus \$8 per shirt to print the logo.

Write an equation that Laila can use to determine the total cost, C , in dollars, to make x shirts.