

- 1 Which value is equivalent to the expression shown?

$$-5(3 \bullet 2 - 4)$$

- A -5
- B -10
- C -26
- D -45

- 2 Which number is *less than* 22,874 ?

- F  $2.18 \times 10^4$
- G  $2.55 \times 10^4$
- H  $2.43 \times 10^5$
- J  $1.78 \times 10^6$

- 3 What is the value of  $4 - 3^3$  ?

- A -23
- B -5
- C 1
- D 3

- 4 Which of the following does *not* represent a rational number?

- F 0
- G  $2\frac{1}{2}$
- H  $\sqrt{3}$
- J  $\frac{-1}{10}$

- 5 **Which of these is a true statement?**
- A  $2 \times 10^{-2} > 2 \times 10^2$
  - B  $3.1 \times 10^3 = 3,100$
  - C  $2.5 \times 10^{-2} = 250$
  - D  $0.235 < 2.35 \times 10^{-2}$
- 6 **The set of whole numbers is *not* a subset of —**
- F irrational numbers
  - G integers
  - H rational numbers
  - J real numbers
- 7 **Which list of numbers is ordered from *greatest to least* ?**
- A  $3.84 \times 10^9, 6.13 \times 10^6, 4.72 \times 10^4, 7.76 \times 10^2$
  - B  $3.84 \times 10^9, 4.72 \times 10^4, 6.13 \times 10^6, 7.76 \times 10^2$
  - C  $7.76 \times 10^2, 6.13 \times 10^6, 4.72 \times 10^4, 3.84 \times 10^9$
  - D  $7.76 \times 10^2, 4.72 \times 10^4, 6.13 \times 10^6, 3.84 \times 10^9,$
- 8 **Which of the following describes a square root of 41 ?**
- F Between 5 and 6
  - G Between 6 and 7
  - H Between 20 and 21
  - J Between 40 and 42
- 9 **What is the value of  $2(5 - a)^2 + 7a$  when  $a = 2$  ?**
- A 16
  - B 20
  - C 32
  - D 50

- 10 Rob had \$363.75 in his bank account on June 12. He made one deposit and two withdrawals as shown.

Rob's Bank Account

Date	Withdrawal	Deposit	Balance
June 12			\$363.75
June 13	\$47.50		
June 14		\$91.25	
June 15	\$54.75		

What was the balance in Rob's bank account after the withdrawal on June 15 ?

- F \$170.25
- G \$352.75
- H \$374.75
- J \$557.25

- 11 What is the value of  $x^3 + x^2 + x$  when  $x = 3$  ?

- A 9
- B 18
- C 21
- D 39

- 12 Which number is a perfect square?

- F 6
- G 9
- H 12
- J 15

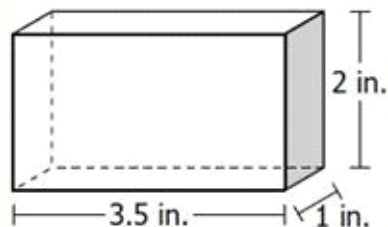
- 13 Albert had a goal of saving \$80. He saved 115% of his goal. How much money did Albert save?

- A \$70
- B \$92
- C \$115
- D \$195

14 The square root of which of the following integers is between 7 and 8 ?

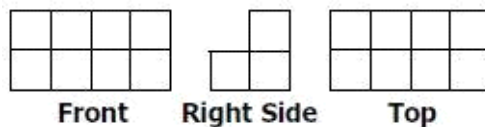
- F 49
- G 52
- H 64
- J 65

15 What is the surface area of a rectangular prism with the dimensions shown?



- A 7 sq in.
- B 14 sq in.
- C 18 sq in.
- D 25 sq in.

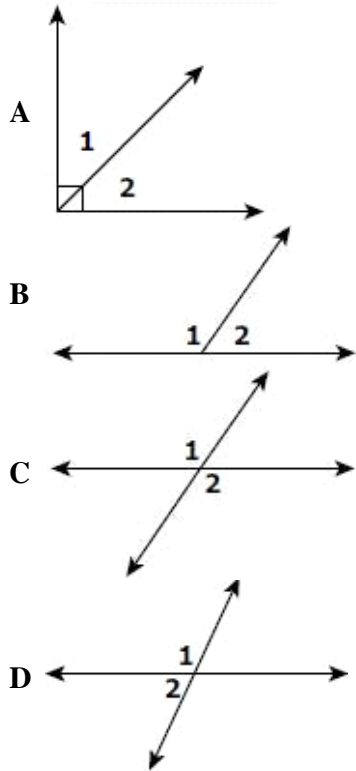
16 Three different views of a three-dimensional figure constructed from cubes are shown.



Which of the following figures could these views represent?

- F
- G
- H
- J

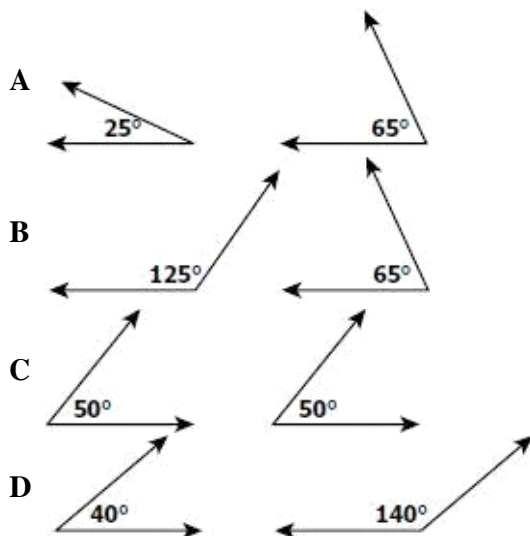
17 In which diagram do  $\angle 1$  and  $\angle 2$  appear to be vertical angles?



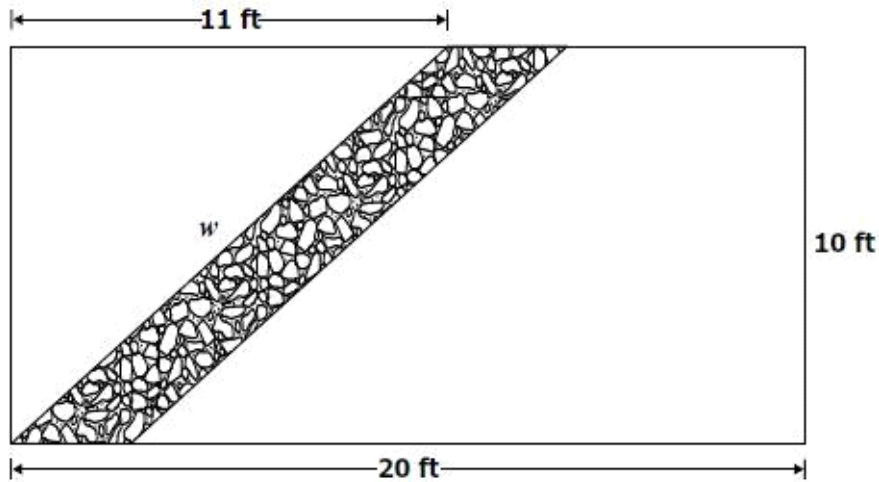
18 Which group of three side lengths could form a right triangle?

- F 5 ft, 12 ft, 13 ft
- G 7 ft, 11 ft, 14 ft
- H 15 ft, 20 ft, 22 ft
- J 18 ft, 34 ft, 39 ft

19 Which pair of angles is supplementary?

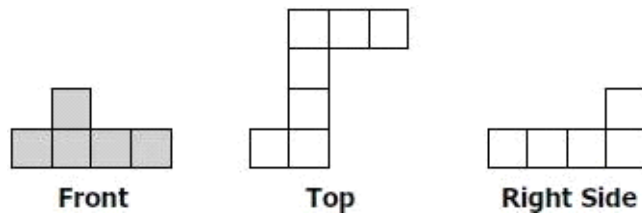


- 20 Mr. Malone plans to construct a walkway through his rectangular garden, as shown in the drawing.



Which is closest to the value of  $w$  ?

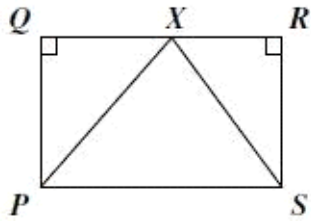
- F 22 ft
  - G 21 ft
  - H 15 ft
  - J 11 ft
- 21 A three-dimensional figure is constructed from identical cubes. Three views of the figure are shown.



Which of the following could be the three-dimensional figure?

- A
- B
- C
- D

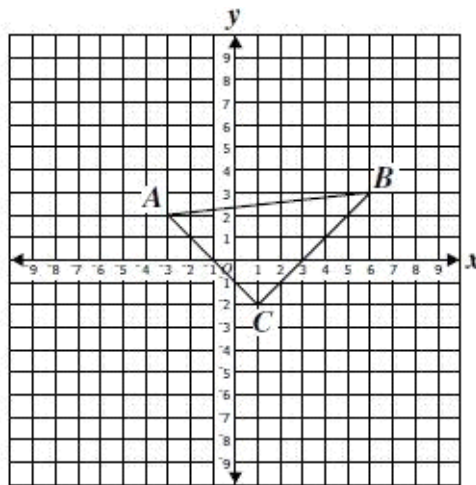
- 22 Three triangles are drawn in rectangle  $PQRS$ .



Which of the following segments is a hypotenuse of one of these triangles?

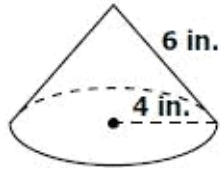
- F  $\overline{RS}$
- G  $\overline{RQ}$
- H  $\overline{XS}$
- J  $\overline{XQ}$

- 23 What are the new coordinates of point  $B$  after  $\triangle ABC$  is translated 2 units down and 3 units to the left?



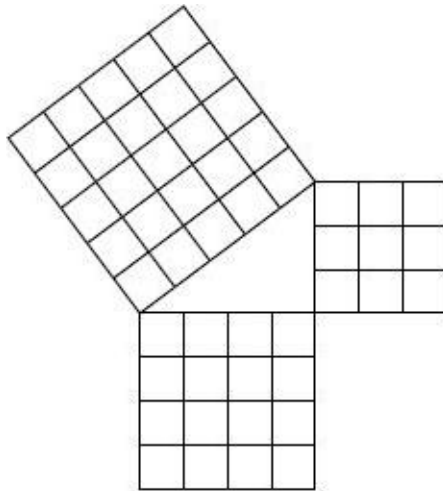
- A (3,1)
- B (4, 0)
- C (8, 6)
- D (9, 5)

- 24 The radius of the base of a cone is 4 inches. The slant height of the cone is 6 inches. Which is closest to the surface area of the cone?



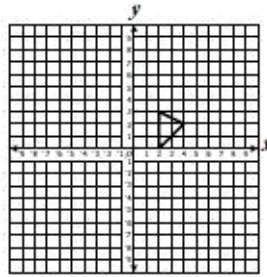
- F 75 sq in.
- G 100 sq in.
- H 126 sq in.
- J 188 sq in.

- 25 Which of the following equations is represented by the figure?

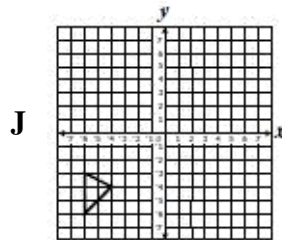
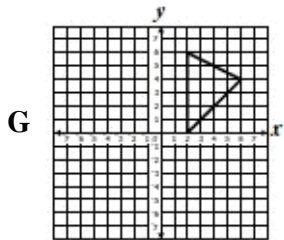
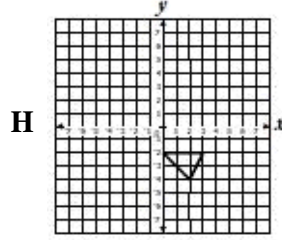
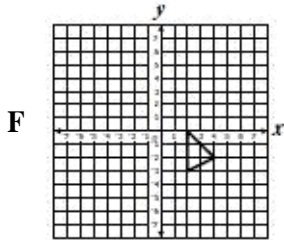


- A  $4^2 + 5^2 = 9^2$
- B  $3^2 + 5^2 = 8^2$
- C  $3^2 + 4^2 = 7^2$
- D  $3^2 + 4^2 = 5^2$

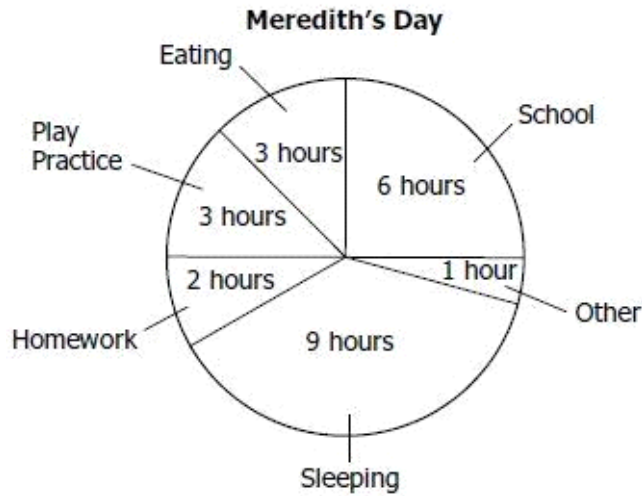




Which of the following graphs shows a dilation of the triangle from a fixed point?



27 This circle graph displays the number of hours Meredith spent on various activities in a day.









Based on the data in the circle graph, what percent of Meredith's day was spent on activities other than sleeping and eating?

- A 12%
- B 25%
- C 38%
- D 50%

- 28 This graph shows the number of slices of pizza sold each day during one week in the school cafeteria.

**Slices of Pizza Sold**

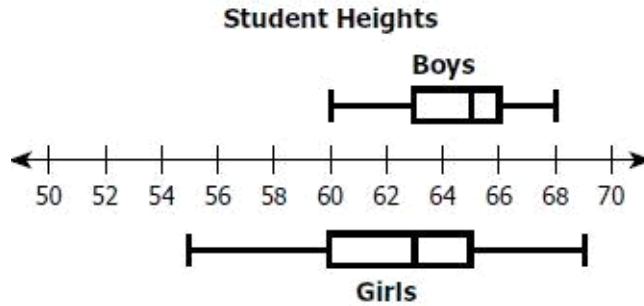
Day of Week	Number Sold
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Key:  = 10 slices

Each slice of pizza costs \$0.50. What is the total amount of money the school cafeteria collected on the sales of pizza for this week?

- F \$7.50  
G \$15.50  
H \$75.00  
J \$150.00
- 29 A fair cube used in a game has 1 yellow side and 5 green sides. Emily will win the game if the cube lands on a green side on her next roll. Which statement *best* describes Emily's chance of winning the game?
- A Certainly will win  
B Certainly will lose  
C Most likely will win  
D Most likely will lose

- 30 These box-and-whisker plots summarize the heights of the boys and the heights of the girls in an eighth-grade class.



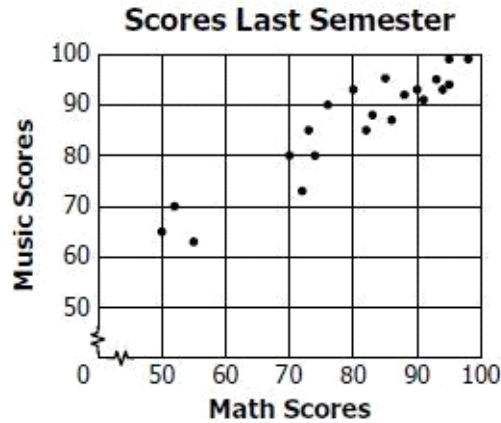
**Based on the data in these box-and-whisker plots, which statement is true?**

- F The tallest student in the class is a girl.
  - G The shortest student in the class is a boy.
  - H The range of the boys' heights is greater than the range of the girls' heights.
  - J The median height of the girls is greater than the median height of the boys.
- 31 This matrix shows the grades on three weekly quizzes for Eric, Sam, and Curt. What is the element at row 2, column 3 ?

	Eric	Sam	Curt
1st	87	92	82
2nd	82	86	80
3rd	85	88	89

- A 80
- B 86
- C 87
- D 88

- 32 The following scatterplot shows the scores several students received in math and music classes last semester.



**Which statement best describes the relationship in the scatterplot?**

- F As the math score decreases, the music score increases.
  - G As the math score increases, the music score decreases.
  - H As the math score decreases, the music score does not change.
  - J As the math score increases, the music score increases.
- 33 This table shows the number of marbles in a bag by color. If one marble is randomly selected from the bag, what is the probability that it will be a blue or a red marble?

**Marbles in a Bag**

Color	Number
Blue	7
Green	10
Yellow	14
Red	19

- A 24%
- B 26%
- C 38%
- D 52%

34 Three girls sent each other text messages as shown.

- Sonia sent Hannah 3 text messages and Takara 2 text messages.
- Hannah sent Sonia 1 text message and Takara 3 text messages.
- Takara sent Sonia 2 text messages and Hannah 1 text message.

Which matrix best summarizes this information?

To

		Sonia	Hannah	Takara
F	From Sonia	0	1	2
	Hannah	3	0	1
	Takara	2	3	0

To

To

		Sonia	Hannah	Takara
G	From Sonia	1	1	2
	Hannah	1	3	3
	Takara	2	1	1

To

To

		Sonia	Hannah	Takara
H	From Sonia	0	3	2
	Hannah	1	0	3
	Takara	2	1	0

To

To

		Sonia	Hannah	Takara
J	From Sonia	2	1	0
	Hannah	0	3	2
	Takara	1	0	3

To

35 Margaret has \$200 in her savings account. She will deposit \$50 into this account each week and will make no withdrawals. Which table represents this situation, excluding interest?

Savings

Week	Amount in Account
0	\$200
1	\$250
2	\$300
3	\$350

Savings

Week	Amount in Account
0	\$200
1	\$150
2	\$100
3	\$50

Savings

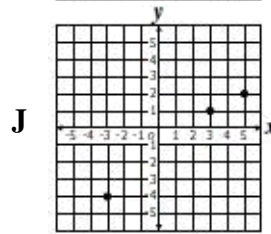
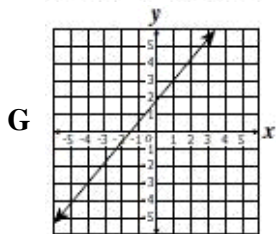
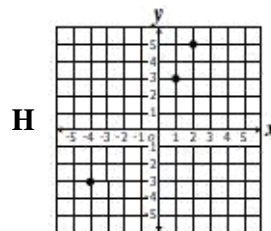
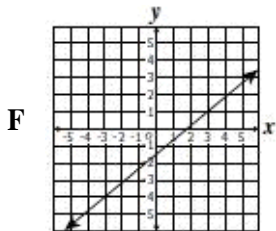
Week	Amount in Account
0	\$50
1	\$250
2	\$450
3	\$650

Savings

Week	Amount in Account
0	\$50
1	\$100
2	\$150
3	\$200

36 Which graph contains all the ordered pairs in this table?

$x$	$y$
-3	-4
3	1
5	2



37 Which of the following is equivalent to the inequality  $5x + 7 < 17$  ?

- A  $5x < 10$
- B  $5x > 10$
- C  $5x < 24$
- D  $5x > 24$

38 Which table contains only points that lie on the line of the equation  $y = 6x - 6$  ?

F

$x$	$y$
0	-6
5	5

G

$x$	$y$
0	6
3	12

H

$x$	$y$
2	6
-2	-18

J

$x$	$y$
2	6
-1	0

39 What value of  $n$  makes this equation true?

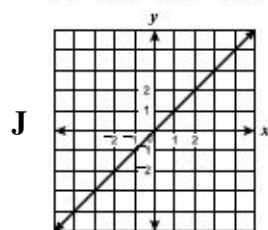
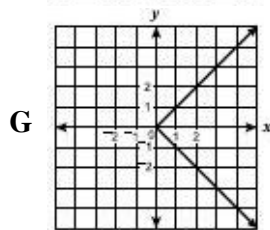
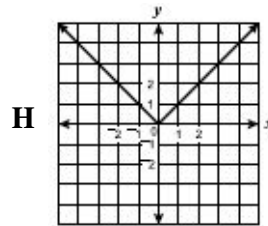
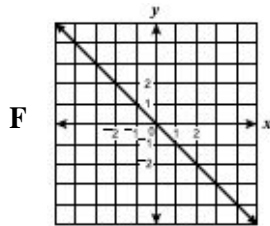
$$4n + 9 = 6$$

- A -7.50
- B -0.75
- C 3.75
- D 10.50

40

$x$	$y$
4	4
2	2
0	0
-2	-2
-4	-4

If the line containing the points in the table is plotted on a coordinate system, what does the graph look like?



41

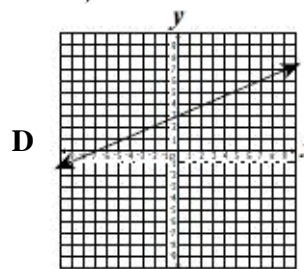
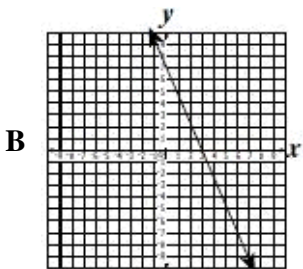
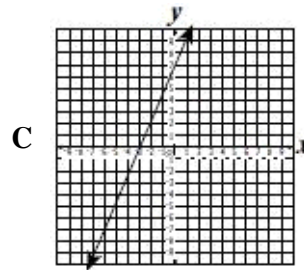
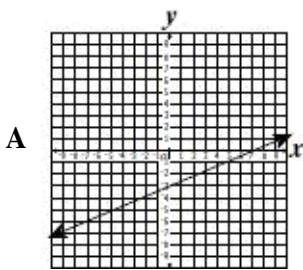
At the Good Earth Orchard, there are  $\frac{1}{3}$  as many lemon trees as there are orange trees. There are 132 orange trees at Good Earth Orchard. How many lemon trees are there?

- A 43
- B 44
- C 396
- D 528

- 42 The formula  $d = 52t + 65t$  can be used to find the distance,  $d$ , between two cars after traveling  $t$  hours in opposite directions. After how many hours will the distance between the two cars be 234 miles?
- F 0.5  
 G 2.0  
 H 3.6  
 J 4.5

- 43 Which graph contains the ordered pairs listed in the table?

$x$	$y$
0	7
-3	0



- 44 Which number is *not* an element of the domain of the relation shown?

$$\{ (-2, 4), (0, 4), (1, 2), (3, 2) \}$$

- F -2  
 G 0  
 H 1  
 J 4



- 45 Which of the following tables of values is true for the equation  $y = 3(x - 3)$ ?

A

x	y
-4	-21
4	3

B

x	y
-4	-3
4	21

C

x	y
-4	-15
4	9

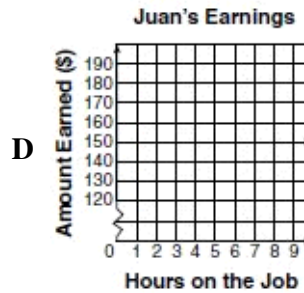
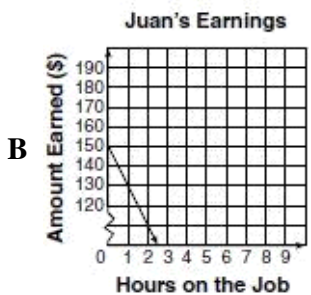
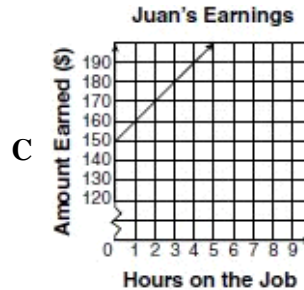
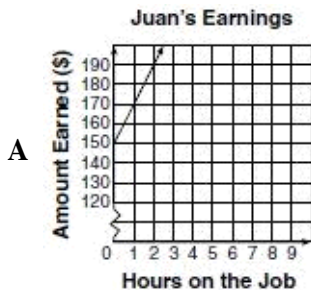
D

x	y
-4	-9
4	15

- 46 It takes Kim 8 hours to travel a distance of 360 miles. At this rate, how many miles does Kim travel in 12 hours?

- F 720  
G 600  
H 540  
J 390

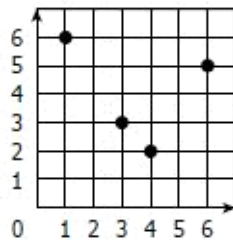
- 47 Juan earns a flat fee of \$150 plus \$20 for every hour he works decorating a house. Which graph correctly displays Juan's earnings?



48 What is the solution to  $\frac{n}{2} - 4 > 10$  ?

- F  $n > 7$
- G  $n > 12$
- H  $n > 24$
- J  $n > 28$

49 A relation is graphed as shown.



What is the domain of this relation?

- A { 1, 3, 4, 6 }
- B { 2, 3, 5, 6 }
- C { 1, 2, 3, 4, 5, 6 }
- D {0, 1, 2, 3, 4, 5, 6 }

50 Which of these equations represents the table of values?

$x$	$y$
-2	2
1	8
3	12
6	18

- F  $y = -x$
- G  $y = x + 7$
- H  $y = 3x + 3$
- J  $y = 2x + 6$