Systems

52 What is the solution to the system of equations below?

$$4x - 7y = -2$$
$$12x - 21y = -42$$

F The ordered pair $(-\frac{1}{2}, 0)$ is the solution.

G The ordered pair $(0, \frac{2}{7})$ is the solution.

H There are an infinite number of solutions.

J There is no solution.

35 What is the value of x in the solution to this system of equations?

$$3x = 2y + 14$$
$$y = -6x + 18$$

A $\frac{10}{3}$

B -2

C 2

D $-\frac{10}{3}$

Systems

6 One wall inside a shoe store is used to display walking shoes and running shoes. There are 135 pairs of shoes in this display. There are 1.5 times as many pairs of walking shoes as there are running shoes on display. How many pairs of walking shoes and running shoes are on display?

F 90 pairs of walking shoes and 45 pairs of running shoes

G 54 pairs of walking shoes and 81 pairs of running shoes

H 45 pairs of walking shoes and 90 pairs of running shoes

J 81 pairs of walking shoes and 54 pairs of running shoes

24 A new spiral notebook contains 30 more sheets of paper than a new memo book. The total number of sheets of paper in 3 new spiral notebooks and 5 new memo books is 810. Which system of equations can be used to find s, the number of sheets of paper in one new spiral notebook, and m, the number of sheets of paper in one new memo book?

F
$$s - m = 30$$
$$3s + 5m = 810$$

G
$$s + m = 30$$
$$3s + 5m = 810$$

H
$$s - m = 30$$
$$5s + 3m = 810$$

J
$$s + m = 30$$
$$5s + 3m = 810$$

Systems

45 The owner of a clothing store buys T-shirts for c dollars each and sells them for p dollars each. Last month she bought 600 T-shirts and sold 500 of them and made a profit of $2,800. This month she bought 400 T-shirts and sold them all and made a profit of $2,400. Which system of equations can be used to determine the values of c and p?

A
$$500p - 600c = 2{,}800$$
$$400p - 400c = 2{,}400$$

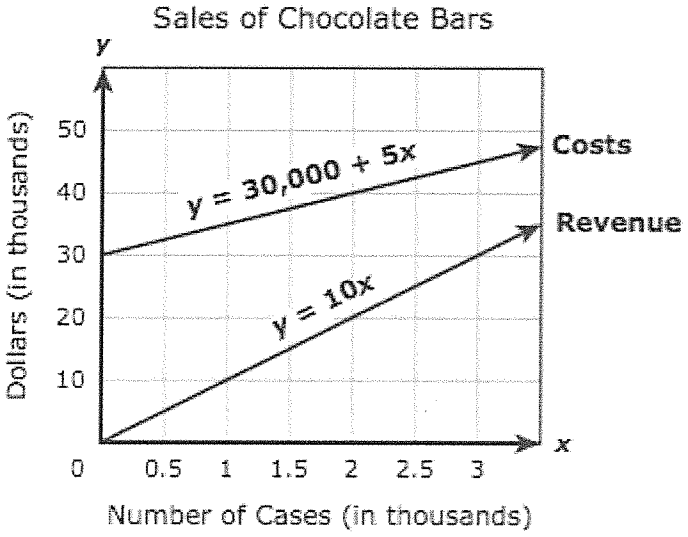
B
$$600p - 500c = 2{,}800$$
$$400p - 400c = 2{,}400$$

C
$$500p - 600c = 2{,}800$$
$$400p - c = 2{,}400$$

D
$$600p - 500c = 2{,}800$$
$$400p - c = 2{,}400$$

Systems

49 A candy company sells cases of chocolate bars. The company has fixed costs of $30,000, and each case of chocolate bars costs an additional $5 to make. The company sells each case for $10. The graph of a system of linear equations representing this company's costs and revenue for manufacturing and selling x cases of chocolate bars is shown below.



How many cases of chocolate bars will this company need to sell in order for costs and revenue to be equal?

A 3,500

B 6,000

C 35,000

D 60,000

Systems

11 What is the value of x in the solution to the system of equations below?

$$15x - 12y = 13$$
$$30x + 9y = 4$$

A $-\frac{17}{3}$

B $\frac{1}{3}$

C $-\frac{2}{3}$

D $\frac{1}{6}$

6 A college student needs 11 classes that are worth a total of 40 credits in order to complete her degree. The college offers both 4-credit classes and 3-credit classes. Which system of equations can be used to determine f, the number of 4-credit classes the student can take to complete her degree, and h, the number of 3-credit classes?

F $f + h = 40$
$4h + 3f = 11$

G $f + h = 11$
$4h + 3f = 40$

H $f + h = 40$
$4f + 3h = 11$

J $f + h = 11$
$4f + 3h = 40$

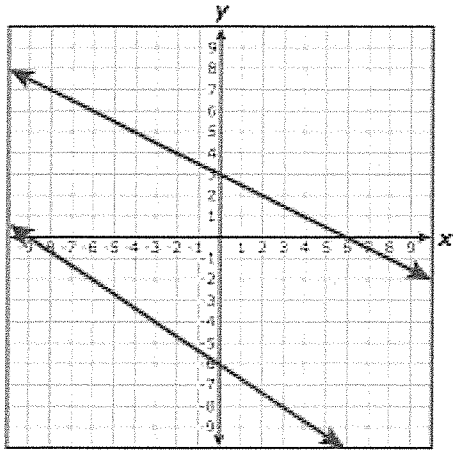
Systems

20 There are 156 laptops and desktop computers in a lab. There are 8 more laptops than desktop computers. What is the total number of laptops in the lab?

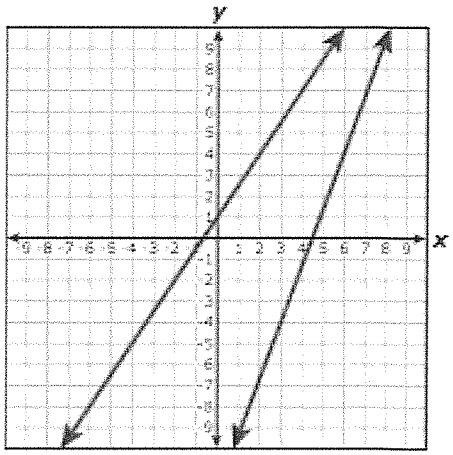
Record your answer and fill in the bubbles on your answer document.

3 Which of the following graphs best represents a system of equations that has no solution?

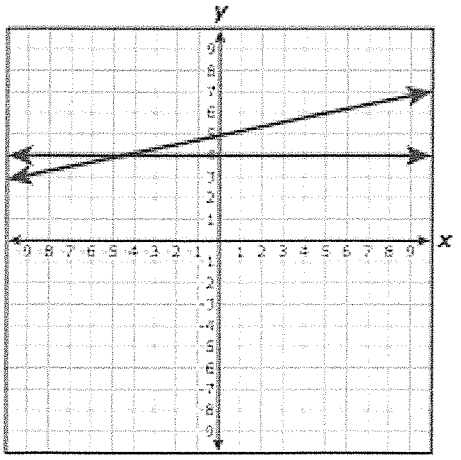
A



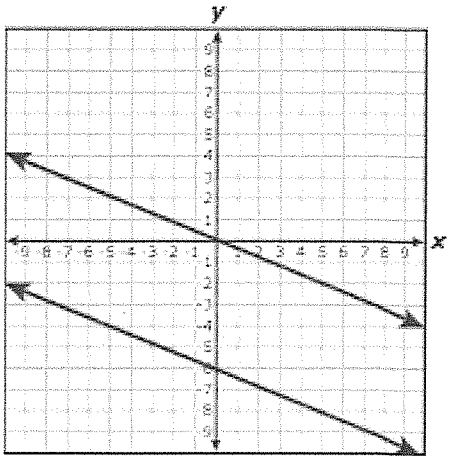
C



B



D



Systems

26 What is the value of x in the solution to the system of equations below?

$$6x + 3y = 13$$
$$3x - y = 4$$

F 1

G $\frac{5}{3}$

H $\frac{8}{3}$

J $\frac{7}{3}$

40 A high school band held a bake sale. The number of cupcakes sold was four more than twice the number of cookies sold. The band sold a total of 52 cupcakes and cookies. How many cupcakes were sold?

F 28

G 16

H 36

J 24

Systems

12 There are 9 books stacked on a shelf. The thickness of each book is either 1 inch or 2 inches. The height of the stack of 9 books is 14 inches. Which system of equations can be used to determine x, the number of 1-inch-thick books in the stack, and y, the number of 2-inch-thick books?

F $x + y = 14$
$2x + y = 9$

G $x + y = 14$
$x + 2y = 9$

H $x + y = 9$
$x + 2y = 14$

J $x + y = 9$
$2x + y = 14$