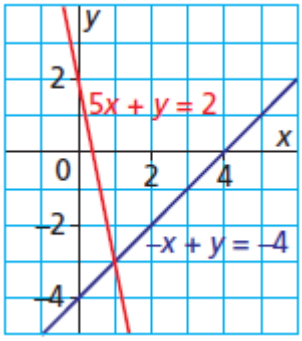
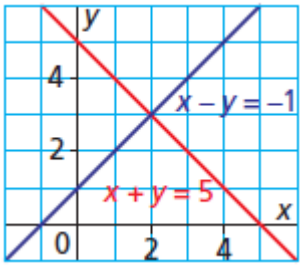
Solving a Linear System Graphically Practice

Use the following information to answer the first question.

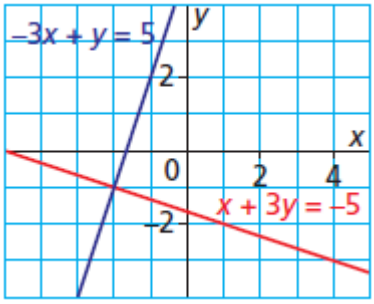
A.



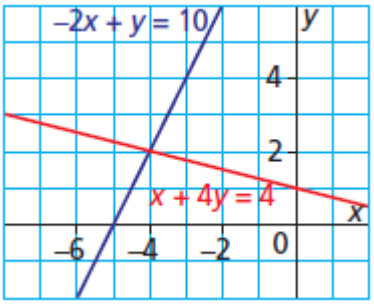
B.



C.



D.



1. Which linear system above has a solution in quadrant 2?

   A) A B) B C) C D) D

2. The solution to the linear system y = x + 6 and y = -5x – 24 is (M, K). The value of K is ___.

3. In order the solve the linear system $6x + 6y = 36$ and $3x - 2y = 18$ graphically, their equivalent equations to input in the graphing calculator are

A) $y = x + 6$
$y = 1.5x + 9$

B) $y = x + 6$
$y = 1.5x + 9$

C) $y = -x + 6$
$y = 1.5x - 9$

D) $y = -x + 6$
$y = 1.5x - 9$

4. Solve the following linear system graphically. Verify.

$$5x + y = -9$$

$$3x - 8y = 29$$

Use the following information to answer the next question.

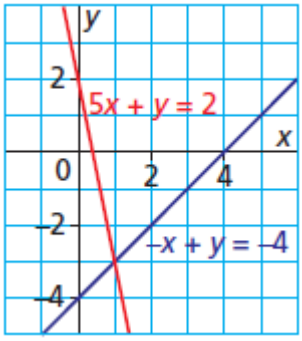
A group of 275 adults and children attended a dance recital to make money for the local dance club. Each adult ticket was $8 and each child ticket was $3. The total revenue at the gate was $1 625.

5. How many children attended the recital?

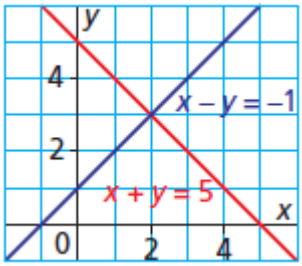
Solving a Linear System Graphically PracticeSolutions

Use the following information to answer the first question.

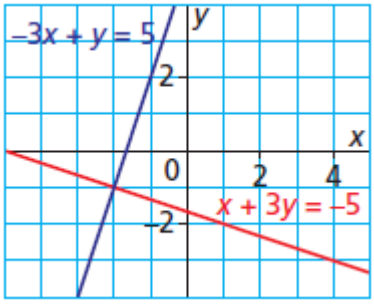
A.



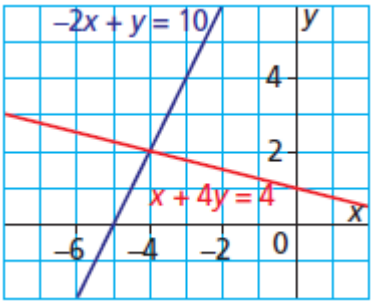
B.



C.



D.



1. Which linear system above has a solution in quadrant 2?

   A) A B) B C) C D) D

Solution

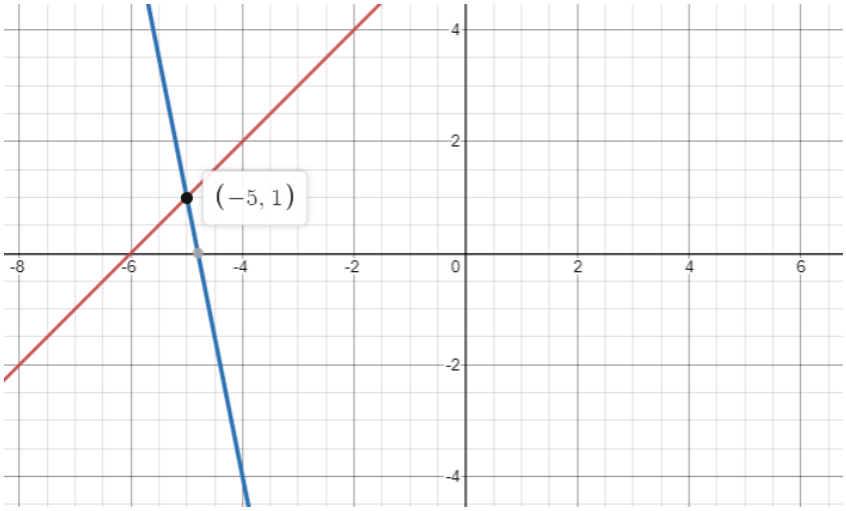
The solution is the point where the two lines intersect.

The correct answer is D.

2. The solution to the linear system y = x + 6 and y = -5x – 24 is (M, K). The value of K is _1_.

Solution

See the graph below.



The intersection point is (-5,1) which is the solution. In the question, we are asked for the y-coordinate of the intersection point.

The value of K is 1.

3. In order the solve the linear system 6x + 6y = 36 and 3x – 2y = 18 graphically, their equivalent equations to input in the graphing calculator are

A) y = x + 6	B) y = x + 6	C) y = -x + 6	D) y = -x + 6
y = 1.5x + 9	y = 1.5x + 9	y = 1.5x – 9	y = 1.5x – 9

Solution

Equation 1

6x + 6y = 36

Subtract 6x from both sides.

6y = -6x + 36

Divide every term by 6.

y = -x + 6

Equation 2

3x – 2y = 18

Subtract 3x from both sides.

-2y = -3x + 18

Divide every term by -2.

y = 1.5x – 9

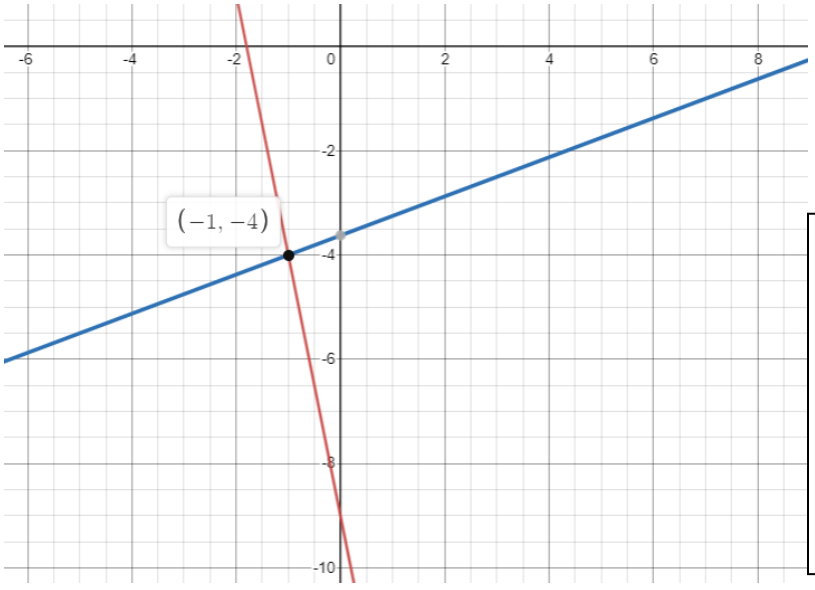
The correct answer is D.

4. Solve the following linear system graphically. Verify.

$$5x + y = -9$$

$$3x - 8y = 29$$

Solution



The solution is the intersection point.

The solution is (-1,-4).

Verify

5x + y = -9	3x – 8y = 29
5(-1) + (-4) = -9	3(-1) – 8(-4) = 29
-5 + -4 = -9	-3 + 32 = 29
-9 = -9	29 = 29

Use the following information to answer the next question.

A group of 275 adults and children attended a dance recital to make money for the local dance club. Each adult ticket was $8 and each child ticket was $3. The total revenue at the gate was $1 625.

5. How many children attended the recital?

Solution

Let A = Number of adults

Let C = Number of children

Equation For Total People	Equation For Total Revenue
$A + C = 275$	$8A + 3C = 1\,625$

The solution is (160, 115).

There are 115 children at the recital.