Unit 6 Lesson 2 Systems of Equations

Find the additive inverse for each term.

      1. 4   2. $-x$ 3. $5x$ 4. $8y$

Substitute for $x = 5$ and solve for y.

      5. $2x - 5y = 20$ 6. $-4x + y = 9$

Substitute for $y = -3$ and solve for x.

      7. $x + 6y = -12$ 8. $9x - 3y = 18$

NOTES

Solving a System of Linear Equations by Elimination

What represents the solution of a system?

a) $4x - 2y = 7$ b) $3x + 7y = 15$
     $x + 2y = 3$ $5x + 2y = -4$

Solving systems of equations by Graphing

$a)$ $x + y = 2$
$\quad y = x^2 - 4$

$b)$ $x + y = 2$
$\quad y = x^2 - 4x + 4$

$a)$ $x + 2y = 6$
$\quad x^2 + 4y^2 = 20$

$b)$ $3x^2 - 2y^2 = 1$
$\quad 4x - y = 3$

$c)$ $x^3 + y = 0$
$\quad 2x^2 - y = 0$

d) The sum of two numbers is 10 and their product is 24. Find the numbers.

e) The difference between the squares of two numbers is 3. Twice the square of the first number increased by the square of the second number is 9. Find the product of the numbers.

f) Find the length and width of a rectangle whose perimeter is 36 feet and whose area is 77 square feet.

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Unit 6 Lesson 2 Graded Practice

1) $7x + 2y = -19$
   $-x + 2y = 21$

2) $4x - y = 20$
   $-2x - 2y = 10$

3) $6x - 12y = 24$
   $-x - 6y = 4$

4) $-7x + 4y = 24$
   $4x - 4y = 0$

5) $x + 7y = 0$
   $2x - 8y = 22$

6) $4x + 2y = 10$
   $x - y = 13$

7) $x^3 + y = 0$
   $x^2 - y = 0$

8) $y^2 - x = 4$
   $x^2 + y^2 = 4$

9) $x^2 - 2y = 8$
   $x^2 + y^2 = 16$

10) $x - 3y = -5$
    $x^2 + y^2 = 25$

11) The sum of two numbers is 20 and their product is 96. Find the sum of their squares.

12) The difference between the squares of two numbers is 5. Twice the square of the second number subtracted from three times the square of the first number is 19. Find the product of the numbers.

13) Find the length and width of a rectangle whose perimeter is 40 feet and whose area is 96 square feet.

14) A circular pond is modeled by the equation $x^2 + y^2 = 225$. A bridge over the pond is modeled by a segment of the equation $x - 7y = -75$. What are the coordinates of the points where the bridge meets the edge of the pond?