Algebra 1   Sec 7-1 to 7-4 Review   Spring 2014

Give answers to systems of equations as an ordered pair.
Find the solution to each system of equations by graphing.

1. $y = -\frac{1}{2}x$
   $y = 2x + 5$

2. $y = 4$
   $2x - 5y = 40$

3. $y = 3x - 3$
   $y = -x + 5$

4. $x = -3$
   $6x + 18y = 36$

Without graphing determine if each system of equations has ONE, NONE, or MANY solutions.

5. $y = 2x - 6$
   $y = -\frac{1}{2}x + 3$

6. $y = -\frac{1}{4}x + 5$
   $2x + 8y = 40$

7. $y = 3x + 2$
   $18x - 6y = 24$

8. $x = 6$
   $6x + 2y = 8$

Solve each system of equations using **substitution**.

9. $b = 4a + 3$
   $b = -2a + 15$

10. $y = 3x - 8$
    $7x + 2y = 101$

11. $y = 2x + 5$
    $4x - 3y = -24$

12. $g + h = 4$
    $6g - 9h = 24$

Solve each system of equations using **elimination**.

13. $4x + 3y = 6$
    $4x + 8y = -4$

14. $7m - 2n = 40$
    $5m + 2n = 32$

15. $9x + 5y = 37$
    $x + 2y = 7$

16. $10c + 9d = 25$
    $4c - 3d = -23$

17. $6x + 7y = 34$
    $4x + 11y = 48$

Solve each system of equations by any method.

18. $y = -3x + 7$
    $6x + 2y = 10$

19. $4x + 2y = 8$
    $6x + y = 16$

20. $8x - 4y = 32$
    $10x - 5y = 40$

21. This past weekend you and some of you neighbors went to an amusement park. Four adults and six children cost $294. The following weekend you went again with some of your relatives. Three adults and five children cost $233. Write and solve a system of equations to find the price of an adult admission and the price of a child's admission.

22. Suppose you invest $2500 for equipment to print designs on T-shirts that you will then sell. Each blank T-shirt will cost you $3. After you've printed the design on the shirt you will sell them for $20 each. How many shirts must you sell in order to break even?

23. In your piggy bank you have some nickels and dimes. There are a total of 45 coins worth $3.40. Write and solve a system of equations to find the number of nickels and dimes in your piggy bank.

Algebra 1   Sec 7-1 to 7-4 Review   Spring 2014   ANSWERS

1. $(-2,1)$ 2. $(3,4)$ 3. $(2,3)$ 4. $(-3,3)$ 5. One   6. Many

7. None   8. One   9. $(2,11)$ 10. $(9,19)$ 11. $(4.5,14)$ 12. $(4,0)$

13. $(3,-2)$ 14. $(6,1)$ 15. $(3,2)$ 16. $(-2,5)$ 17. $(1,4)$ 18. No Solution

19. $(3,-2)$ 20. Many Solutions.

21. EQs: $4A + 6C = 294$ A =Adult admission C =Children's admission
            $3A + 5C = 233$ Answer: Children's admission is \$25 Adults admission is \$36

22. EQs: Expenses= $2500 + 3T$ Income= $20T$ $T = $ # t-shirts
            Break-even: $2500 + 3T = 20T$ Answer: 148 t-shirts

23. EQs: $N + D = 45$ $N = $ # nickels $D = $ # dimes
          $0.05N + 0.10D = 3.40$ Answer: 22 nickels and 23 dimes.