Systems of Equations Word Problems

Name ANSWER Key
Date_____ Pd_____

1. A store received $823 from the sale of 5 tape recorders and 7 radios. If the cost of tape recorders exceeded the cost of radios by $47, what was the cost of a tape recorder?

t = tape recorders cost $t = r + 47$ $R = \$49$
r = radios cost $5t + 7r = 823$ $t = \$96$

2. A local kennel has twice as many cats (c) as dogs (d). When full, the kennel has a total of 30 cats and dogs. Which system of equations could be used to find the number of cats in the kennel when it is full?

c = cats
d = dogs

$c = 2d$ Cats = 20
$c + d = 30$ Dog = 10

3. The junior class sold 120 turkey dinner plates and 200 chicken dinner plates for a total of $2,150. The senior class sold 100 turkey plates and 300 chicken plates, raising $2,625. What was the cost of each turkey dinner plate?

$120t + 200c = 2150$
$100t + 300c = 2625$

$t = \$7.50$
$c = \$6.25$

4. Yesterday a total of 24 students were present in Alfred's class. There were 3 fewer girls than twice the number of boys. Which system of equations can be used to find g, the number of girls who were present in Alfred's class yesterday, and b, the number of boys who were present?

$b + g = 24$ 9 boys
$g = 2b - 3$ 15 girls

$b = 9$
$g = 15$

5. Members of a senior class held a car wash to raise funds for their senior prom. They charged $3 to wash a car and $5 to wash a pick-up truck or a sport utility vehicle. If they earned a total of $275 by washing a total of 75 vehicles, how many cars did they wash?

$c + t = 75$ $C = 25$ cars
$3c + 5t = 275$ $t = 50$ trucks
$3(75 - t) + 5t = 275$
$-2t = -50$
$t = 50$

6. The length of a rectangle is one inch longer than twice the width. What is the width of the rectangle when the perimeter is 92 inches?

$l = 2w + 1$ width = 15
$92 = 2w + 2l$ length = 31
$92 = 6w + 2$
$90 = 6w$
$15 = w$

7. A group of 3 children and 2 adults pay a total of $120 to take a karate class. A group of 5 children and 1 adult take the same karate class for $95. What is the total cost for 1 child and 1 adult to take the karate class?

$$3c + 2a = 120$$
$$5c + 1a = 95$$
$$-7c = -70$$
$$c = 10$$

$$C = \$10$$
$$a = \$45$$

8. During the band's fruit sale, five dozen oranges cost as much as four dozen grapefruits. Terry bought two dozen oranges and a dozen grapefruit, spending $27.30. What was the cost of a dozen oranges?

$$5o = 4g$$
$$2o + 1g = 27.30$$
$$2.6g = 27.30$$

grape fruits = $10.50
Oranges = $8.40

9. The bill for a lunch of three hamburgers and two drinks is $9.67. The bill for a lunch of four hamburgers and three drinks is $13.21. What is the total cost of one hamburger and one drink?

$$3h + 2d = 9.67$$
$$4h + 3d = 13.21$$
$$h = \$2.59 \quad d = \$.95$$

10. For a special order, the Coverup Company manufactured 1200 shirts. Sweatshirts were priced at $14 each and T-shirts at $8 each. The company received a total of $11,400 for the shirts. How many of each type of shirt did the Coverup Company manufacture for this order?

$$S + T = 1200$$
$$14S + 8T = 11400$$

S = 300 sweatshirts
T = 900 T-shirts

11. Frank is going to buy ties at $7.50 per tie and some shirts at $18.50 per shirt. If he buys twice as many ties as shirts and spends $205, how many shirts did he buy?

6 shirts
12 Ties

12. A movie theater charges $7 for an adult's ticket and $4 for a child's ticket. On a recent night, the sale of child's tickets three times the sale of adult's tickets. If the total amount collected was $1,995, how many adult's tickets were sold?

$$7a + 4c = 1995$$
$$c = 3a$$
$$7a + 12a = 1995$$
$$19a = 1995$$

a = 105 adults
c = 315 children