

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## Systems of Equations - Word Problems

Solve each problem by setting up a system of equations. Be sure to identify variables.

**DIGITS OF NUMBERS** \*Recall that the value of 52 is really  $5 \times 10$  (Since 5 is in the ten's place) +  $2 \times 1$  (since 2 is in the unit's place)

1. The sum of the digits of a two-digit number is 10. The value of the number is 16 times the units' digit. Find the number.
2. The sum of the digits of a two-digit number is 12. The number with the digits reversed is 15 times the original tens' digit. Find the original number.
3. The sum of the digits of a two-digit number is 4. If the order of the digits is reversed, the result is a number that exceeds the original number by 18. Find the original number.
4. The sum of the digits of a two-digit number is 11. The number obtained by reversing the order of the digits is 27 less than the original number. Find the original number.
5. The tens' digit of a two-digit number exceeds the units' digit by 2. The sum of the tens' digit and twice the units' digit is 17. Find the number
6. The units' digit of a two-digit number exceeds three times the tens' digit by 3. If the tens' digit is subtracted from the units' digit, the difference is 7. Find the number.

- 7.** If the tens' digit of a two-digit number is subtracted from the units' digit, the difference is 8. The number with the digits reversed is 10 more than nine times the units' digit of the original number. Find the number.
- 8.** The sum of the digits of a two-digit number is 15. The number with the digits reversed is 30 more than six times the tens' digit of the original number. Find the number.
- 9.** The sum of the digits of a three-digit number is 17. The units' digit is 6. If the order of the digits is reversed, the result is a number that is 297 more than the original number. What is the original number?
- 10.** The tens' digit of a three-digit number is 5. The units' digit is twice the hundreds' digit. If the order of the digits is reversed, the new number is 396 more than the original number. What is the original number?
- 11.** The sum of the digits of a three-digit number is 14. The hundreds' digit is four times the tens' digit and twice the units' digit. Find the number.
- 12.** The sum of the digits of a three-digit number is 13. The hundreds' digit is two more than the tens' digit. The tens' digit is four more than the units' digit. Find the number.

**ANGLES \*Recall that complimentary angles add up to  $90^\circ$  and supplementary angles add up to  $180^\circ$ .**

**13.** Two angles are supplementary. The measure of one angle is  $30^\circ$  more than the measure of the other. What is the measure of the larger angle?

**14.** Two angles are complementary. The sum of the measures of the larger angle and three times the measure of the smaller angle is  $114^\circ$ . What is the measure of each angle?

**15.** Two angles are supplementary. The measure of one of these angles is  $12^\circ$  less than one third the measure of the other. What is the measure of each angle?

### **MORE PRACTICE**

**16.** Two games and five puzzles cost \$33.25 altogether. Three games and two puzzles cost \$32.00. If every game costs the same amount, and every puzzle costs the same amount, what is the cost of each puzzle?

**17.** The difference between three times one number and a lesser one is 37. The sum of the greater number and twice the lesser number is 38. Find the numbers.

**18.** The length of a rectangular garden is three times the width. If the perimeter is 32 meters, what are the dimensions of the garden?

- 19.** Kim has 40 coins worth total of \$8.80. Some of the coins are nickels and the rest are quarters. How many of each kind of coin does Kim have?
- 20.** Lou has \$8.60 in dimes and quarters. If he has twelve more quarters than dimes, how many dimes does he have?
- 21.** Jessica purchased some \$0.20 stamps and some \$0.25 stamps at the post office. If she paid \$7.75 for 35 stamps, how many of each kind did she purchase?
- 22.** Bath towels sell for \$13.25 each, while hand towels sell for \$4.50 each. Theresa buys some of each type of towel for a total of \$62.25. If she spends \$17.25 more on bath towels than she spends on hand towels, how many of each type does she buy?
- 23.** It costs \$5.40 to ship a radial saw and \$6.50 to ship a table saw to Ohio. ON Monday an ordering consisting of table saws and radial saws was sent to Ohio for a total shipping cost of \$140.70. If nine more table saws has been sent, the number of table saws in the order would be three times the number of radial saws. How many saws of each type were sent in the order?
- 24.** A video disk rental company charges a fixed amount for the first two days of a rental and an additional charge for each day thereafter. Juan paid \$19.50 for a disk that he kept six days, and Tom paid \$27.00 for a disk that he kept for nine days. How much would it cost to rent a video disk for ten days from the same company?
- 25.** Erik has 50 coins, all nickels, dimes, and quarters. They are worth \$3.60 altogether. There are two more dimes than quarters, and four times as many nickels as the combined number of dimes and quarters. How many of each kind of coin does Erik have?