

Writing Equations from Word Problems

NAME _____

For each word problem, write an equation and solve.

1. The measure of a complement of an angle is 32° more than three times the angle. Find the measurement of the two angles.
2. The supplement of the measurement of an angle is 16° less than three times the angle. Find the measurement of the angle and its supplement.
3. The measurement of the complement of an angle exceeds the measure of the angle by 25%. Find the measurement of the angle and its complement.
4. The ratio of the measurement of an angle to its complement is 1 : 2. Find the measurement of the angle and its complement.

5. The ratio of the measurement of an angle to its supplement is $3 : 5$. Find the measurement of the angle and its supplement.
6. Let x represent the measurement of an acute angle in degrees. The ratio of the complement of x to the supplement of x is $2 : 5$. Guess and check to determine the value of x . Explain why your answer is correct.
7. Three adjacent angles are at a point. The second angle is 20° more than the first, and the third angle is 20° more than the second angle.
- Find the measurements of all three angles.
 - Compare the expressions you used for the three angles and their combined expression. Explain how they are equal and how they reveal different information about this situation.

8. Four adjacent angles are **on a line**. The measurements of the four angles are four consecutive even numbers. Determine the measurements of all four angles.
9. Three adjacent angles are **at a point**. The ratio of the measurement of the second angle to the measurement of the first angle is $4 : 3$. The ratio of the measurement of the third angle to the measurement of the second angle is $5 : 4$. Determine the measurements of all three angles.
10. The measurement of an angle is $\frac{2}{3}$ the measurement of its **supplement**. Find the measurements of the angle and its supplement.
11. The measurement of an angle is $\frac{1}{4}$ the measurement of its **complement**. Find the measurements of the two complementary angles.

12. Five angles are at a point. The measurement of each angle is one of five consecutive, positive whole numbers.
- Determine the measurements of all five angles.
 - Compare the expressions you used for the five angles and their combined expression. Explain how they are equivalent and how they reveal different information about this situation.

16. Let x° be the measurement of an angle. The ratio of the measurement of the **complement** of the angle to the measurement of the **supplement** of the angle is $1 : 3$. The measurement of the complement of the angle and the measurement of the supplement of the angle have a sum of 180° . Use a tape diagram to find the measurement of this angle.

17. The difference between three times the measurement of the complement of an angle and the measurement of the supplement of that angle is 20° . What is the measurement of the angle?