Cumulative Review: Chapters 1–9

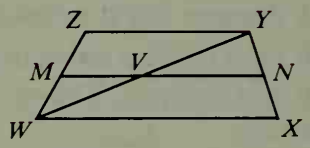
A

1. If x, $x + 3$, and y are the lengths of the sides of a triangle, then $\underline{?} < y < \underline{?}$.

2. Find the measure of an angle if the measures of a supplement and a complement of the angle have the ratio 5:2.

3. Given: $\overline{MN}$ is the median of a trapezoid $WXYZ$.
Prove: $\overline{MN}$ bisects $\overline{WY}$.

4. Prove: The diagonals of a rhombus divide the rhombus into four congruent triangles.



5. A 30°-60°-90° triangle is inscribed in a circle of radius 7. Find the length of each leg of the triangle.

6. Must three parallel lines be coplanar? Draw a diagram to illustrate your answer.

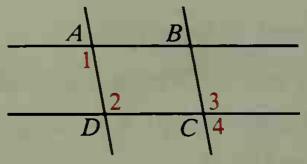
7. The measures of the angles of a triangle are in the ratio 1:9:10. Find the measure of each angle.

8. If a regular polygon has 18 sides, find the measure of each interior angle and the measure of each exterior angle.

9. If $ABCE$ is a square and $AC = 4$, find AB.

10. If the lengths of two sides of a right triangle are 6 and 10, find two possible lengths for the third side.

11. Given: $\angle 1 \cong \angle 2$; $\angle 2 \cong \angle 3$
Prove: $\overline{AB} \cong \overline{DC}$



12. When the altitude to the hypotenuse of a certain right triangle is drawn, the altitude divides the hypotenuse into segments of lengths 8 and 10. Find the length of the shorter leg.

13. Write **(a)** the contrapositive and **(b)** the inverse of the following statement: If quad. $ABCD$ is a parallelogram, then $\angle A \cong \angle C$.

14. If $\overrightarrow{OB}$ bisects $\angle AOC$, $m\angle AOB = 5t - 7$, and $m\angle AOC = 8t + 10$, find the numerical measure of $\angle BOC$.

15. Two chords of a circle intersect inside a circle, dividing one chord into segments of length 15 and 12 and the other chord into segments of length 9 and t. Find the value of t.

16. If points R and S on a number line have coordinates -11 and 3, and $\overline{RS}$ has midpoint T, find RS and ST.