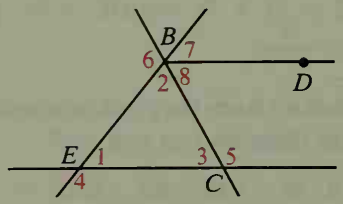
Cumulative Review: Chapters 1–5

A

1. Given two parallel lines n and k, how many planes contain n and k?
2. **a.** Is it possible for two lines to be neither intersecting nor parallel? If so, what are the lines called?
   b. Repeat part (a), replacing *lines* with *planes*.
3. Write the converse of the statement: If you are a member of the skiing club, then you enjoy winter weather.
4. On a number line, point A has a coordinate -5 and B has a coordinate 3. Find the coordinate of the midpoint of $\overline{AB}$.
5. Name the property that justifies the statement: If $\angle 1 \cong \angle 2$ and $\angle 2 \cong \angle 3$, then $\angle 1 \cong \angle 3$.

In Exercises 6–10, complete each statement about the diagram. Then state the definition, postulate, or theorem that justifies your answer.



6. $m\angle 1 + m\angle 2 + m\angle 3 =$ ___?___
7. $m\angle 1 + m\angle 4 =$ ___?___
8. $m\angle 1 + m\angle 2 = m\angle$ ___?___
9. If $\overleftrightarrow{EC} \parallel \overleftrightarrow{BD}$, then $\angle 7 \cong$ ___?___.
10. If $\angle 2 \cong \angle 3$, then $\overline{EC} \cong$ ___?___.

Complete each statement.

11. The median to the base of an isosceles triangle ___?___ the vertex angle and is ___?___ to the base.
12. **a.** If a point lies on the perpendicular bisector of $\overline{AB}$, then the point is equidistant from ___?___.
    b. If a point lies on the bisector of $\angle RST$, then the point is equidistant from ___?___.
13. Suppose $\triangle ART \cong \triangle DEB$.
    a. $\triangle EBD \cong$ ___?___ **b.** $\overline{AT} \cong$ ___?___ **c.** $m\angle R =$ ___?___
14. If a regular polygon has 40 sides, the measure of each interior angle is ___?___.
15. When two parallel lines are cut by a transversal, a pair of corresponding angles have measures $2x + 50$ and $3x$. The measures of the angles are ___?___ and ___?___.

B

16. In $\triangle SUN$, $\angle S \cong \angle N$. Given that $SU = 2x + 7$, $UN = 4x - 1$, and $SN = 3x + 4$, find the numerical length of each side.
17. M and N are the midpoints of the legs of trapezoid $EFGH$. If bases $\overline{EF}$ and $\overline{HG}$ have lengths $2r + s$ and $4r - 3s$, express the length of $\overline{MN}$ in terms of r and s.