- 17. Complete with *outside*, *inside*, or *on*: In a right triangle, (a) the medians intersect \_? the triangle, (b) the altitudes intersect \_? the triangle, and (c) the perpendicular bisectors of the sides intersect \_? the triangle.
- **18.** In  $\triangle RST$ , the bisector of  $\triangle T$  meets  $\overline{RS}$  at X. RS = 15, ST = 27, TR = 18. Find RX.
- 19. Given: All of Bill's sisters like to dance.

  What can you conclude from each additional statement? If no conclusion is possible, write no conclusion.
  - a. Janice is Bill's sister.

- b. Holly loves to dance.
- c. Maureen is not Bill's sister.
- d. Kim does not like to dance.
- **20.** Suppose someone plans to write an indirect proof of the statement "In  $\square ABCD$  if  $\overline{AB} \perp \overline{BC}$ , then ABCD is a rectangle." Write a correct first sentence of the indirect proof.

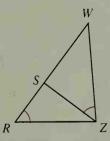
## Complete each statement with the words always, sometimes, or never.

- 21. A contrapositive of a true conditional statement is \_? true.
- 22. The sides of a triangle are ? 14 cm, 17 cm, and 31 cm long.
- 23. In  $\square ABCD$ , if  $m \angle A > m \angle B$ , then  $\angle D$  is  $\stackrel{?}{\_}$  an acute angle.
- 24. Two obtuse triangles are ? similar.
- 25. Two lines perpendicular to a third line are \_\_\_? perpendicular to each other.

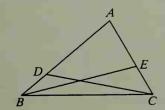
## Complete.

**26.** If 
$$\frac{7}{x} = \frac{9}{10}$$
, then  $\frac{?}{} = \frac{?}{}$ , and  $x = \frac{?}{}$ .

- **B** 27. The sine of any acute angle must be greater than \_? and less than \_?.
  - 28. a.  $\triangle RWZ \sim \frac{?}{}$ 
    - $\mathbf{b.} \; \frac{RW}{?} = \frac{ZR}{?} = \frac{WZ}{?}$
    - **c.** RW = 15, ZR = 10, and SZ = 8.  $WZ = \frac{?}{}$  and  $RS = \frac{?}{}$



29. Given: AB > AC;  $\overline{BD} \cong \overline{EC}$ Prove: BE > CD



**30.** Given:  $\frac{PR}{TR} = \frac{SR}{QR}$ Prove:  $\angle S \cong \angle O$ 

