**What can you conclude by using the given statement together with each additional statement? If no conclusion is possible, say so.**

**16.** Given: The diagonals of a rhombus are perpendicular.
- **a.** *JKLM* is a rhombus.
- **b.** In quad. *DIME*, $\overline{DM} \perp \overline{IE}$.
- **c.** *STUV* is not a rhombus.
- **d.** In quad. *NOPQ*, $\overline{NP} \not\perp \overline{OQ}$.

**17.** Given: The diagonals of a rectangle are congruent.
- **a.** *PQRS* is a rectangle.
- **b.** In quad. *ABCD*, $AC = BD$.
- **c.** *WXYZ* is not a rectangle.
- **d.** In quad. *STAR*, $SA > TR$.

**18.** Given: Every square is a rhombus.
- **a.** *ABCD* is a rhombus.
- **b.** In quad. *LAST*, $LA \neq LT$.
- **c.** *PQRS* is a square.
- **d.** *GHIJ* is not a square.

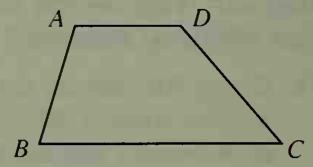
**C** **19.** What simpler name can be used for the converse of the inverse of a conditional?

**20.** Write the contrapositive of the converse of the inverse of the conditional: If $r$, then $s$.

**Prove each of the following statements by proving its contrapositive. Begin by writing what is given and what is to be proved.**

**21.** If $m\angle A + m\angle B \neq 180$, then $m\angle D + m\angle C \neq 180$.

**22.** If $n^2$ is not a multiple of 3, then $n$ is not a multiple of 3.




## Mixed Review Exercises

**Complete each statement with the word *always*, *sometimes*, or *never*.**

**1.** Two lines that do not intersect are ___?___ parallel.

**2.** Two lines parallel to the same plane ___?___ intersect.

**3.** The diagonals of a parallelogram ___?___ bisect each other.

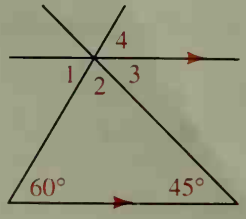
**4.** An acute triangle is ___?___ a right triangle.

**5.** Two lines parallel to a third line are ___?___ parallel.

**6.** A square is ___?___ a rectangle.

**7.** An altitude of a triangle is ___?___ a median.

**8.** Find the measures of $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$ in the figure shown.




**9.** Find the value of $x$.