

10. Write the letters (a)–(d) in an order that completes an indirect proof of the statement: If $n^2 + 6 = 32$, then $n \neq 5$.
 (a) But this contradicts the fact that $n^2 + 6 = 32$.
 (b) Our temporary assumption must be false, and it follows that $n \neq 5$.
 (c) Assume temporarily that $n = 5$.
 (d) Then $n^2 + 6 = 31$.

6-3

11. In $\triangle TOP$, if $OT > OP$, then $m\angle P > \underline{\hspace{1cm}}$.

6-4

12. In $\triangle RED$, if $m\angle D < m\angle E$, then $RD > \underline{\hspace{1cm}}$.

13. Points X and Y are in plane M . If $\overline{PX} \perp$ plane M , then $PX \underline{\hspace{1cm}} PY$.

14. Two sides of a triangle have lengths 6 and 8. The length of the third side must be greater than $\underline{\hspace{1cm}}$ and less than $\underline{\hspace{1cm}}$.

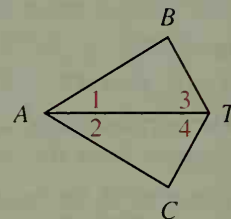
Complete each statement by writing $<$, $=$, or $>$.

15. If $\overline{AB} \cong \overline{AC}$ and $m\angle 1 > m\angle 2$, then $BT \underline{\hspace{1cm}} CT$.

16. If $\overline{TB} \cong \overline{TC}$ and $AB < AC$, then $m\angle 3 \underline{\hspace{1cm}} m\angle 4$.

17. If $\angle 1 \cong \angle 2$ and $\angle 3 \cong \angle 4$, then $AB \underline{\hspace{1cm}} AC$.

18. If $\overline{TB} \cong \overline{TC}$ and $m\angle 3 > m\angle 4$, then $AB \underline{\hspace{1cm}} AC$.



6-5

Chapter Test

Complete each statement by writing $<$, $=$, or $>$.

- If $x > y$ and $y = z$, then $x \underline{\hspace{1cm}} z$.
- If $a > b$, and $c < b$, then $c \underline{\hspace{1cm}} a$.
- If $s = t + 4$, then $s \underline{\hspace{1cm}} t$.
- If $e + 5 = f + 4$, then $e \underline{\hspace{1cm}} f$.
- Write (a) the inverse and (b) the contrapositive of
 “If point P is on \overline{AB} , then $AB > AP$.”
- Pair each statement below with the given statement above and tell what conclusion, if any, must follow.
 - P is not on \overline{AB} .
 - P is on \overline{AB} .
 - $AB \leq AP$
 - $AB > AP$
- If the lengths of the sides of a triangle are x , 15, and 21, then x must be greater than $\underline{\hspace{1cm}}$ and less than $\underline{\hspace{1cm}}$.

In Exercises 8–10 the diagrams are not drawn to scale. If each diagram were drawn accurately, which segment shown would be the shortest?

