Classroom Exercises

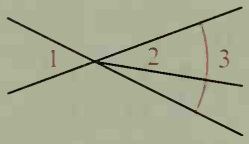
Classify each conditional as true or false.

1. If $3a > 9$, then $a > 27$.
2. If $4b > 20$, then $b > 5$.
3. If $x > 4$, then $x + 1 > 5$.
4. If $x + 1 > 5$, then $x > 4$.
5. If $c - 5 > 45$, then $c > 48$.
6. If $a + b = n$ and $c > b$, then $a + c > n$.
7. If $y > 18$, then $y > 20$.
8. If $y > 20$, then $y > 18$.
9. If $a > 5$ and $5 > b$, then $a > b$.
10. If $d > e$ and $f > e$, then $d > f$.
11. If $g > h$ and $j = h$, then $g > j$.
12. If $p = q + 6$, then $p > q$.
13. If $c > d$ and $e = f$, then $c + e = d + f$.
14. If $g > h$ and $i > j$, then $g + h > i + j$.
15. If $k > l$ and $m > n$, then $k + m > l + n$.
16. If $a > b$, then $100 - a > 100 - b$.

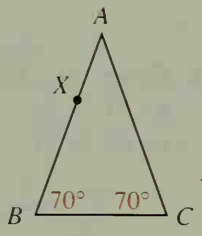
Complete each statement by writing $<$, $=$, or $>$.

17. 

    a. XZ ? $XY + YZ$
    b. XZ ? XY
    c. XZ ? YZ

18. 

    a. $m\angle 1$? $m\angle 3$
    b. $m\angle 2$? $m\angle 3$
    c. $m\angle 1$? $m\angle 2$

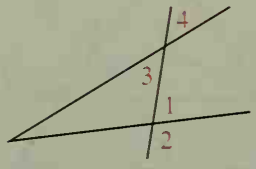
19. 

    a. AB ? AC
    b. AB ? $AX + XB$
    c. AB ? XB
    d. AC ? XB

20. Supply reasons to complete the proof.

    Given: $m\angle 2 > m\angle 1$

    Prove: $m\angle 2 > m\angle 4$



Proof:

Statements	Reasons
1. $m\angle 2 > m\angle 1$	1. ?
2. $m\angle 1 > m\angle 3$	2. ?
3. $m\angle 2 > m\angle 3$	3. ?
4. $\angle 3 \cong \angle 4$, or $m\angle 3 = m\angle 4$	4. ?
5. $m\angle 2 > m\angle 4$	5. ?