Name the property that justifies each statement.

5. $\angle Z \cong \angle Z$
6. $2(3x + 5) = 6x + 10$
7. If $12x = 84$, then $x = 7$.
8. If $\overline{ST} \cong \overline{QR}$, then $\overline{QR} \cong \overline{ST}$.
9. If $m\angle A = 15$, then $3m\angle A = 45$.
10. $XY = XY$
11. If $3x + 14 = 80$, then $3x = 66$.
12. If $KL = MN$, then $MN = KL$.
13. If $2x + y = 5$ and $x = y$, then $2x + x = 5$.
14. If $AB - BC = 12$, then $AB = 12 + BC$.
15. If $\angle 1 \cong \angle 2$ and $\angle 2 \cong \angle 3$, then $\angle 1 \cong \angle 3$.

Use the given property to complete each statement.

16. Addition Property of Equality
If $2x - 5 = 10$, then $2x =$?.
17. Subtraction Property of Equality
If $5x + 6 = 21$, then ? $= 15$.
18. Symmetric Property of Equality
If $AB = YU$, then ?.
19. Symmetric Property of Congruence
If $\angle H \cong \angle K$, then ? $\cong \angle H$.
20. Reflexive Property of Congruence
$\angle PQR \cong$?
21. Distributive Property
$3(x - 1) = 3x -$?
22. Substitution Property
If $LM = 7$ and $EF + LM = NP$, then ? $= NP$.
23. Transitive Property of Congruence
If $\angle XYZ \cong \angle AOB$ and $\angle AOB \cong \angle WYT$, then ?.

Use the given property to complete each statement.

1. Symmetric Property of Equality
If $MN = UT$, then ?.
2. Division Property of Equality
If $4m\angle QWR = 120$, then ?.
3. Transitive Property of Equality
If $SB = VT$ and $VT = MN$, then ?.
4. Addition Property of Equality
If $y - 15 = 36$, then ?.
5. Reflexive Property of Congruence
$\overline{JL} \cong$?

Name the property that justifies each statement.

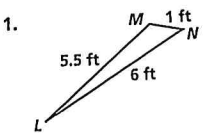
8. If $m\angle G = 35$ and $m\angle S = 35$, then $m\angle G \cong m\angle S$.
9. If $10x + 6y = 14$ and $x = 2y$, then $10(2y) + 6y = 14$.
10. If $TR = MN$ and $MN = VW$, then $TR = VW$.
11. If $\overline{JK} \cong \overline{LM}$, then $\overline{LM} \cong \overline{JK}$.
12. If $\angle Q \cong \angle S$ and $\angle S \cong \angle P$, then $\angle Q \cong \angle P$.

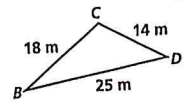
Name _____ Class _____ Date _____

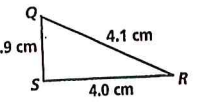
Practice 5-5 Do 1-15 odd, 16-27 all

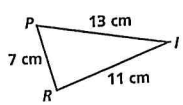
Inequalities in Triangles

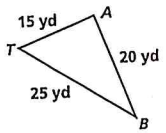
Determine the two largest angles in each triangle. 1st largest 1st

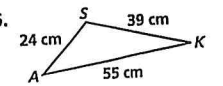
1. 

2. 

3. 

4. 

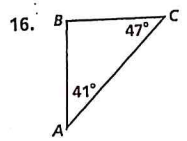
5. 

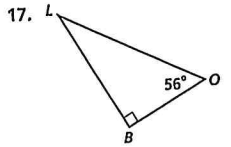
6. 

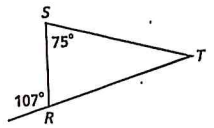
Can a triangle have sides with the given lengths? Explain.

7. 4 m, 7 m, and 8 m
8. 6 m, 10 m, and 17 m
9. 4 in., 4 in., and 4 in.
10. 1 yd, 9 yd, and 9 yd
11. 11 m, 12 m, and 13 m
12. 18 ft, 20 ft, and 40 ft
13. 1.2 cm, 2.6 cm, and 4.9 cm
14. $8\frac{1}{2}$ yd, $9\frac{1}{4}$ yd, and 18 yd
15. 2.5 m, 3.5 m, and 6 m

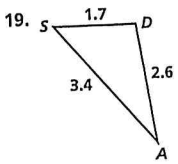
List the sides of each triangle in order from shortest to longest. Be sure to list as segments

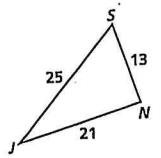
16. 

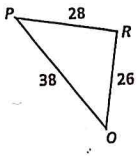
17. 

18. 

List the angles of each triangle in order from largest to smallest.

19. 

20. 

21. 

The lengths of two sides of a triangle are given. Describe the lengths possible for the third side.

22. 4 in., 7 in.
23. 9 cm, 17 cm
24. 5 ft, 5 ft
25. 11 m, 20 m
26. 6 km, 8 km
27. 24 in., 37 in.