Triangle Inequality Theorem

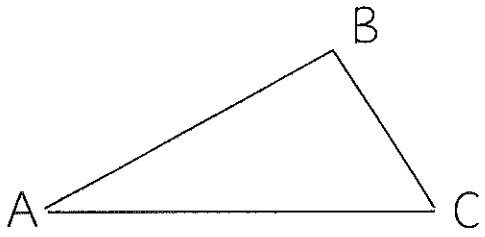
The sum of the lengths of any two sides of a triangles _____

_____

$\overline{AB} + \overline{BC} >$ ____

$\overline{AC} + \overline{BC} >$ ____

$\overline{AB} + \overline{AC} >$ ____



Example #1:
Can the sides form a triangle?
5 cm, 7 cm, and 4cm

Example #2:
Can the sides form a triangle?
11 in, 3 in, and 7 in

You Try::
1) Can the sides form a triangle?
16 ft, 10 ft, and 5 ft

2) Can the sides form a triangle?
15 in, 8 in, and 29 in

3) Can the sides form a triangle?
7 in, 12 in, and 8 in

4) Can the sides form a triangle?
100 mi, 100 mi, and 8 mi

Example #3
Name a possible third side of a triangle if its other two sides have measures of 17 and 9.

You Try:
Name a possible third side of a triangle if its other two sides have measures of 12 and 8.

Name: _____ Date: _____

Triangle Inequality Theorem

Determine if the sets of numbers below can form a triangle. Math proof must be shown in order to receive credit.

1) 12 in, 6, in, 18 in

2) 15 ft, 15 ft, 25 ft

3) 1 mi, 5 mi, 6 mi

4) 12 cm, 5 cm, 10 cm

5) 8 km, 8 km, and 12 km

6) 4 mm, 15 mm, 10 mm

7) 32 ft, 17 ft, 21 ft

8) 3 in, 4 in, 8 in

Name a possible third side of a triangle given two sides.

9) 10 in, 23 in

10) 17 mm, 40 mm

11) 2 in, 3 in

12) 14 cm, 15 cm