Name: _____ Period: _____ Due: _____

Score: ___ / ___

Percent:_____ = ____ / 10

Constructing triangles using side lengths

Assignment 7-4
Constructing triangles

SYW: No work = no credit
Work in Pencil only!

1) Explain the triangle inequality theorem in your own words.

For # 2-9 state whether the following lengths would make a triangle or not. (2 points each)
If so, state whether they can make a scalene, isosceles, or equilateral triangle.
If not, draw a sketch why it doesn't work.

2) 8 cm, 1 cm, 8 cm

3) 4 mm, 1mm, 10 mm

4) 15 cm, 8 cm, 9 cm

5) 3 cm, 4 cm, 6.9 cm

6) 3 in, 3 in, 3 in

7) $1\frac{1}{2}$ ft, 5 ft, $3\frac{1}{2}$ ft

8) 2 m, 2 m, 15 m

9) $\frac{1}{3}$ mi, $\frac{1}{3}$ mi, $\frac{1}{3}$ mi

Challenge Questions

If two side lengths of a triangle are 5 cm and 7 cm, what is the smallest possible integer length of the third side? Why? (2 points)

If two side lengths of a triangle are 5 cm and 7 cm, what is the largest possible integer length of the third side? Why? (2 points)

10) Anna used the scale on a map to calculate the distances "as the crow flies" (meaning the perfectly straight distance) from three points in Central America and the Caribbean islands, marked on the map to the right.

a. According to Anna, how far is it from Jamaica to Panama if you don't go through Honduras?

b. According to Anna, how far is it from Jamaica to Panama if you do go through Honduras?

c. Did Anna make a mistake in her calculations? Explain how you know.

State whether the following angles would make a triangle or not. If so, state whether they could make an obtuse, acute, or right triangle. SHOW YOUR WORK!

13) 40°, 20°, 120°

14) 90°, 80°, 10°

15) 40°, 40°, 140°

16) 60°, 60°, 60°

17) 30°, 80°, 80°

18) 45°, 45°, 90°