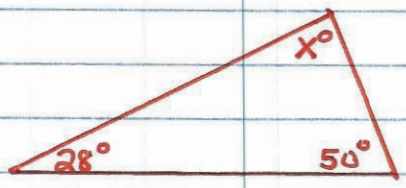
7.3 Extension: Angle Measures of Triangles p. 288

The sum of the angle measures of any triangle is 180°.

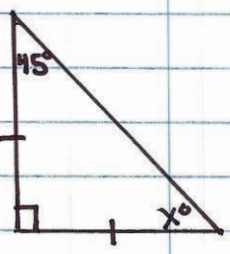
Find the value of x. Then classify each triangle.

1.)



x = 102°
obtuse
scalene

2.)



x = 45°
right
isosceles

Tell whether a triangle can have the given measures. Write yes or no. If no, change the measure of the first angle to form a triangle.

3) 40°, 33°, 72° no; 75°

4) 76.2°, 81.7°, 22.1° yes

5) 115.1°, 47.5°, 93° no; 39.5°

6) $45\frac{2}{3}°$, 70°, $63\frac{5}{6}°$ no; $46\frac{1}{6}$

7.3 Building Triangles using Polystrips

Side lengths (2-20)	Δ possible
8, 8, 8	yes
5, 15, 7	no
20, 9, 5	no
9, 3, 5	no
20, 5, 7	no
3, 11, 15	no
8, 9, 10	yes
13, 11, 14	yes
9, 4, 8	yes
19, 11, 13	yes
5, 5, 6	yes
10, 10, 7	yes

Do you see a pattern why some sets work and some don't?

The sum of the two shorter sides must be greater than the longest side.