NAME _____ DATE _____

Study Guide

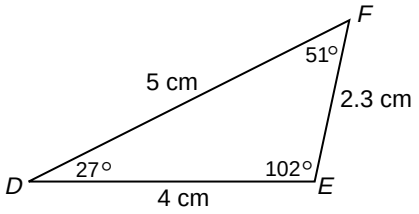
Classifying Triangles

Triangles are classified in two different ways, either by their angles or by their sides.

Classification of Triangles			
Angles		**Sides**	
acute	three acute angles	scalene	no two sides congruent
obtuse	one obtuse angle	isosceles	at least two sides congrent
right	one right angle	equilateral	three sides congruent
equiangular	three congruent angles		

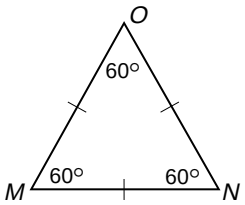
Examples: Classify each triangle by its angles and by its sides.

1



$\triangle DEF$ is obtuse and scalene.

2



$\triangle MNO$ is equiangular and equilaterial.

Use a protractor and ruler to draw triangles using the given conditions. If possible, classify each triangle by the measures of its angles and sides.

1. $\triangle KLM$, $m\angle K = 90$, $KL = 2.5$ cm, $KM = 3$ cm

2. $\triangle XYZ$, $m\angle X = 60$, $XY = YZ = ZX = 3$ cm

3. $\triangle DEF$, $m\angle D = 150$, $DE = DF = 1$ inch

4. $\triangle GHI$, $m\angle G = 30$, $m\angle H = 45$, $GH = 4$ cm

5. $\triangle NOP$, $m\angle N = 90$, $NO = NP = 2.5$ cm

6. $\triangle QRS$, $m\angle Q = 100$, $QS = 1$ inch, $QR = 1\frac{1}{2}$ inches