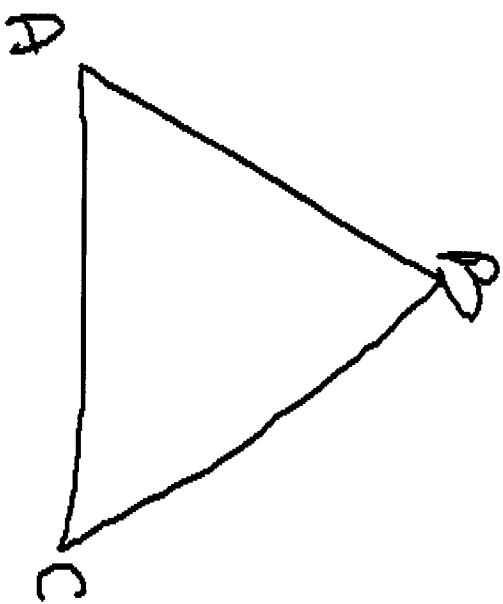


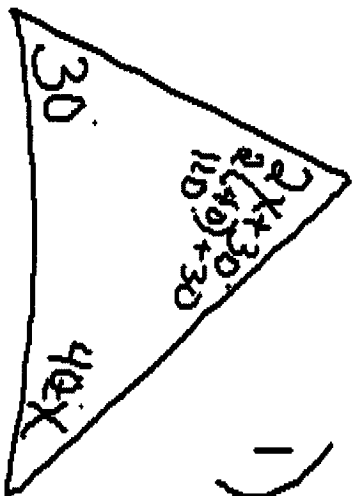
# 10/1/18 Topic: Triangle Theorems



$$\angle A + \angle B + \angle C = 180^\circ$$

\* The 3 angles of a triangle add to 180.

Ex:



1) Find  $x$ .

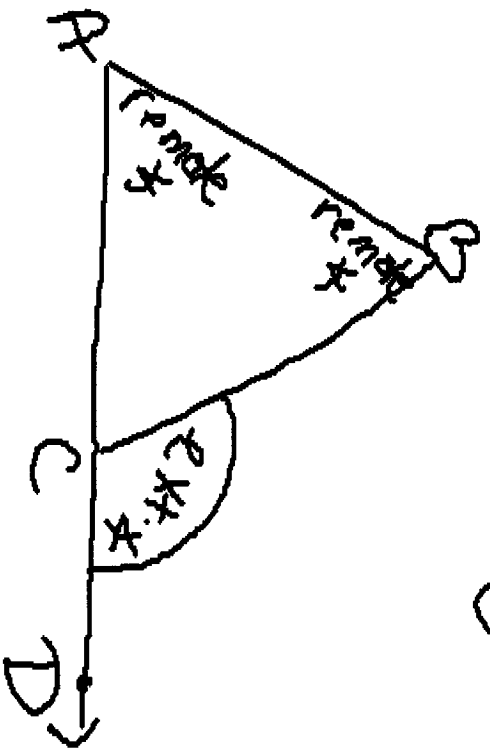
$$2x + 30 + x + 30 = 180$$

$$\begin{array}{r} 3x + 60 = 180 \\ -60 \quad -60 \\ \hline 3x = 120 \\ \frac{3x}{3} = \frac{120}{3} \\ x = 40 \end{array}$$

2) Classify this  $\Delta$  by its sides and angles.

Obtuse  $\Delta$  and Scalene  $\Delta$

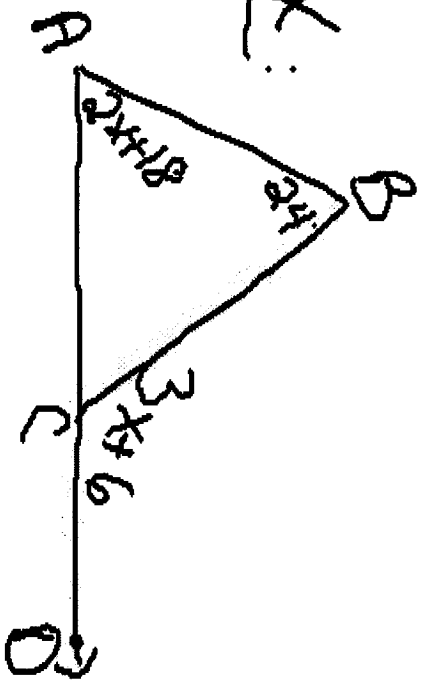
# \* Exterior Angle Theorem



\* The exterior  $x$  is equal to the sum of the 2 remote interior angles.

$$\angle BCD = \angle A + \angle B$$

Ex:



Find:

1)  $x$

$$2x + 18 + 24 = 3x + 6$$

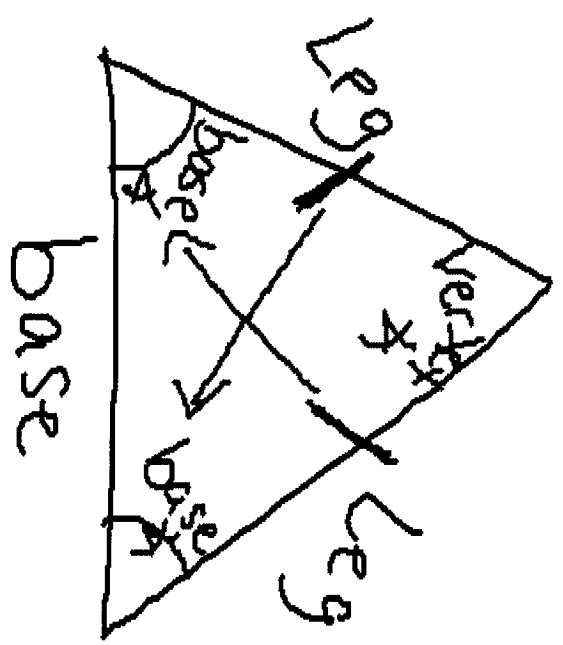
$$\begin{array}{r} 2x + 42 = 3x + 6 \\ -2x \quad -2x \\ \hline 42 = x + 6 \end{array}$$

$$\begin{array}{r} 42 = x + 6 \\ -6 \quad -6 \\ \hline 36 = x \end{array}$$

2)  $m\angle BCD$

$$3(36) + 6 = 114^\circ$$

# Isosceles Triangles



\* IF 2 sides of a  $\Delta \cong$ ,  
 then the  $\angle$ 's opposite  
 those sides  $\cong$ .

\* IF 2 angles of a  $\Delta \cong$ ,  
 then the sides opp.  
 those  $\angle$ 's  $\cong$ .