

9.21.16

Triangle

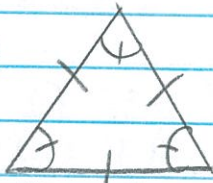
Triangle Sum conjecture:

All the interior angles in a triangle sum to 180°

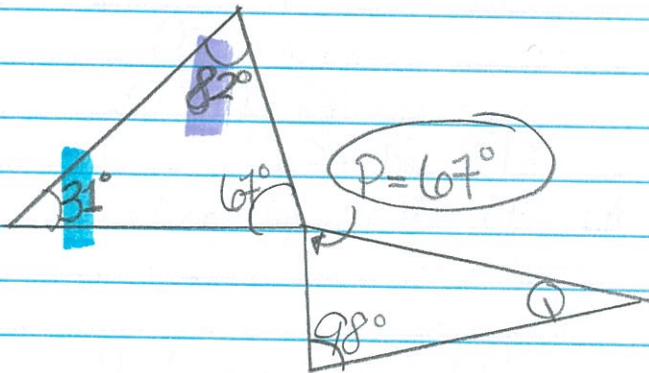
Isosceles Triangle conjecture:

If a triangle is an isosceles then the base angles are congruent

{ an equilateral Δ
always = to 180
an $\angle = 60^\circ$ }



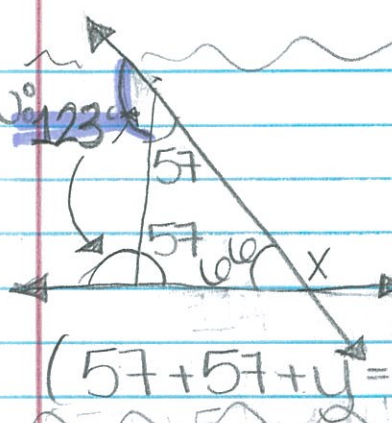
Example: Find P & Q



$$\begin{array}{r} 82 \\ + 31 \\ \hline 113 \end{array} \quad \begin{array}{r} 7 \\ 186 \\ - 113 \\ \hline 67 \end{array}$$

$$\begin{array}{r} 98 \\ + 67 \\ \hline 165 \end{array} \quad \begin{array}{r} 180 \\ - 165 \\ \hline 15 \end{array}$$

Now



$$\begin{array}{r} 180 \\ - 123 \\ \hline 57 \end{array}$$

$$\begin{array}{r} + 57 \\ \hline 114 \end{array}$$

$$\begin{array}{r} 180 \\ - 114 \\ \hline 66 \end{array}$$

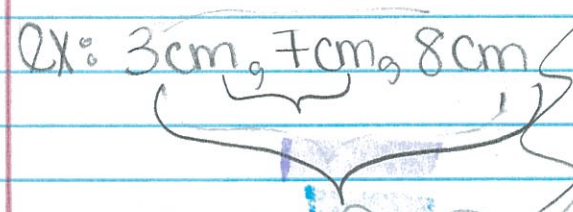
$$\begin{array}{r} 180 \\ - 66 \\ \hline 114 \end{array}$$

$x = 114$

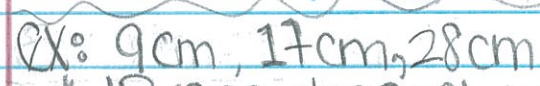
work, you still have to
+ then all increase one doesn't
work

Triangle inequality conjecture:

The sum of any 2 sides in a triangle is always greater than the remaining side.



Ex: a, b, c (sides of a triangle)
 $a + b > c$
 $b + c > a$
 $a + c > b$



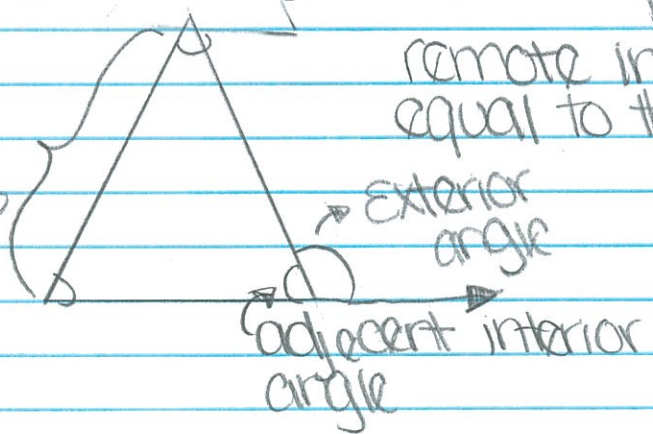
$9 + 17 = 26 < 28$

* IF one doesn't work = no triangle, even if another side does.

Exterior Angle Conjecture:

The sum of the remote interior angles is equal to the exterior angle

Remote interior angles



Side-Angle Inequality Conjecture:

In a triangle, if one side is longer than another, then the angle opposite the longer side is greater than the angle opposite the shorter side.

