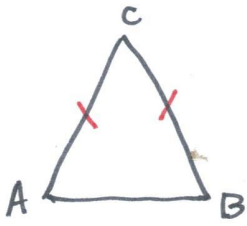


Isosceles \neq Equilateral Triangles (Section 7-5)

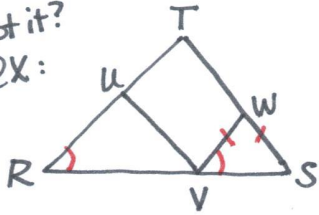
* Isosceles Triangle Theorem: If two sides of a triangle are \cong , then the angles opposite those sides are \cong .



ex: If $\overline{AC} \cong \overline{BC}$, then $\angle A \cong \angle B$

* Converse of the Isosceles Triangle Theorem: If $\angle A \cong \angle B$, then $\overline{AC} \cong \overline{BC}$.

Got it?
ex:



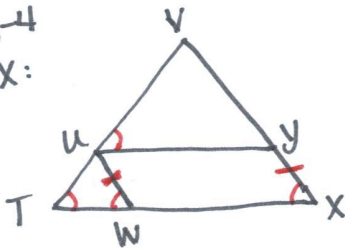
What do we know from this \neq why?

$\angle WVS \cong \angle S$ by Isos. Tri. Theorem

$\angle R \cong \angle S$ by Transitive

$\overline{TR} \cong \overline{TS}$ by Conv. Isos. Tri Theorem

#1-4
ex:



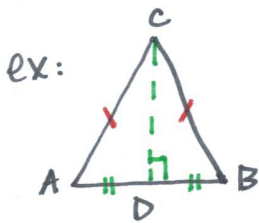
$\overline{VT} \cong \overline{VX}$ by Conv. Isos. Tri. Theorem

$\overline{UT} \cong \overline{UY} \cong \overline{XY}$ by Conv. Isos. Tri. Theorem

$\overline{VU} \cong \overline{VY}$ by Conv. Isos. Tri Theorem

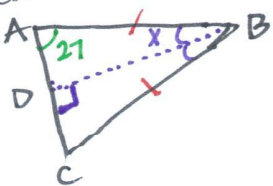
$\angle Vyu \cong \angle Vuy$ by Isos. Tri Theorem

* If a line bisects the vertex angle of an isosceles triangle, then the line is also the \perp bisector of the base.



ex: If $\overline{AC} \cong \overline{BC}$ \neq $\angle ACD \cong \angle BCD$, then $\overline{CD} \perp \overline{AB}$ AND
 $\overline{AD} \cong \overline{BD}$

Got it?
ex:

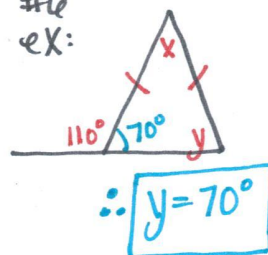


If $\angle A = 27^\circ$, then find x.

$$x = 180 - (90 + 27)$$

$$\boxed{x = 63^\circ}$$

#16
ex:



Find x \neq y.

$$x = 180 - 2(70)$$

$$\boxed{x = 40^\circ}$$

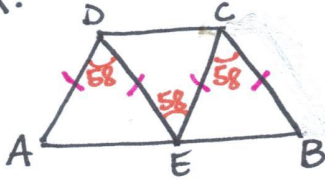
$$\therefore \boxed{y = 70^\circ}$$

* If a triangle is equilateral, then the triangle is equiangular. (all 60°)

* If a triangle is equiangular, then the triangle is equilateral. (all 60°)

Got it?

ex:



If the vertex angles of all isosceles triangles is 58° , what $m\angle A$ & $m\angle BCD$?

$$2m\angle A = 180 - 58$$

$$\frac{2m\angle A}{2} = \frac{122}{2}$$

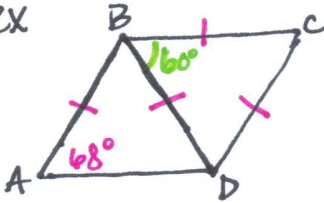
$$m\angle A = 61^\circ$$

$$m\angle BCD = 58 + 61$$

$$m\angle BCD = 119^\circ$$

#7

ex



What's $m\angle ABC$?

$$m\angle ABD = 180 - 2(68)$$

$$m\angle ABD = 44^\circ$$

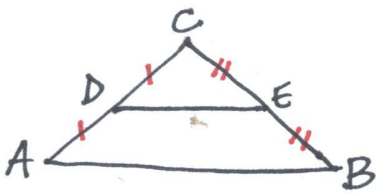
$$m\angle ABC = 44 + 60$$

$$m\angle ABC = 104^\circ$$

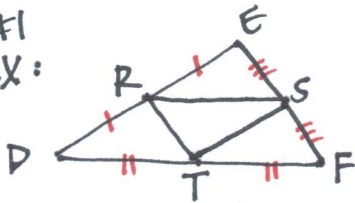
Midsegments of Triangles (Section 8-1)

* Triangle Midsegment Theorem: If D is the midpt of \overline{CA} & E is the mid-pt of \overline{CB} , then $\overline{DE} \parallel \overline{AB}$ and

** $DE = \frac{1}{2} AB$



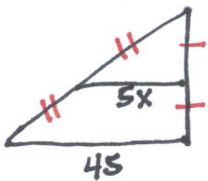
#1
ex:



Identify the \parallel segments.

$\overline{RS} \parallel \overline{DF}$, $\overline{ST} \parallel \overline{DE}$,
 $\overline{RT} \parallel \overline{EF}$

#3
ex:

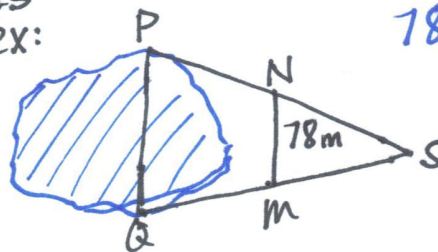


$5x = \frac{1}{2}(45)$

$\frac{10x}{10} = \frac{45}{10}$

$x = 4.5$

#5
ex:

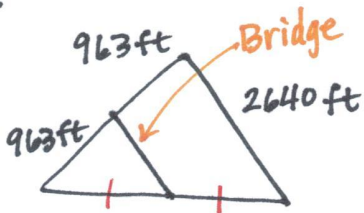


$78 = \frac{1}{2}(PQ)$

$PQ = 156m$

Got it?

ex:

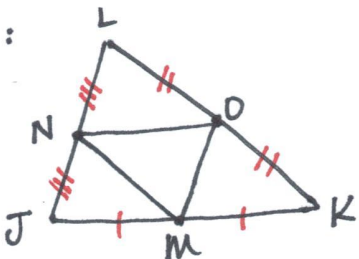


$B = \frac{1}{2}(2640)$

$B = 1320 \text{ ft}$

Lesson check

ex:



which segment is \parallel to \overline{JK} ? $\overline{ND} \parallel \overline{JK}$

If $LK = 46$, what is NM ? $NM = \frac{1}{2}(46)$

$NM = 23$

If $JK = 5x + 20$ & $NO = 20$, what's x ?

$20 = \frac{1}{2}(5x + 20)$

$40 = 5x + 20$

$20 = 5x$

$x = 4$