Remember The sum of the interior angles of ALL quadrilaterals adds up to 360°.

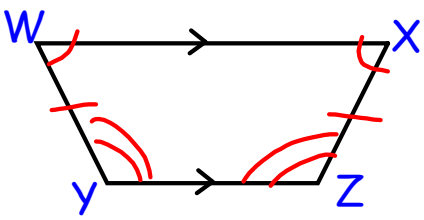
Same side interior angles add up to 180°.

Pythagorean Theorem is $a^2+b^2=c^2$ → hypotenuse

(Sides) Definion of a trapezoid: quadrilateral w/ 1 pair of // sides

Jan 13-10:01 AM

Iso trap



Legs: $\overline{WY}$, $\overline{XZ}$

// Bases: $\overline{WX}$, $\overline{YZ}$

Base angles: $\angle Y \cong \angle Z$

Base angles: $\angle W \cong \angle X$

Jan 14-4:13 PM

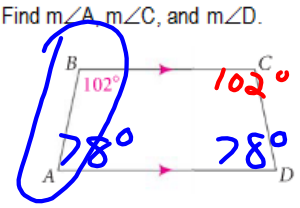
Theorem 6 -15

The base angles of an isosceles trapezoid are congruent

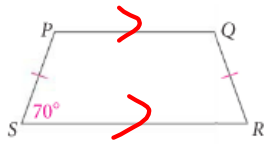
Jan 12-8:43 PM

Target 1: Find the measures of the angles of an isosceles trapezoid.

a. ABCD is an isosceles trapezoid and m∠B = 102. Find m∠A, m∠C, and m∠D.



b. PQRS is an isosceles trapezoid with m∠S = 70. Find the m∠P, m∠Q, m∠R.



m∠P = 110

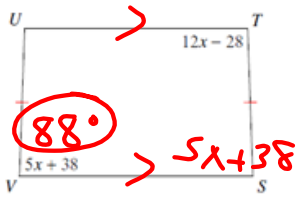
m∠Q = 110

m∠R = 70

Jan 14-4:16 PM

Target 1: Find the measures of the angles of an isosceles trapezoid.

c. Find m∠V in trapezoid STUV.



$5x+38+12x-28=180$

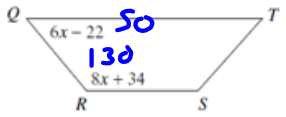
$17x+10=180$

$-10 \quad -10$

$\frac{17x}{17}=\frac{170}{17}$

$x=10$

d. Find m∠R in trapezoid QRST.



This is one angle from each base… that means they're supplementary.

Add them together and set them equal to 180.

6x – 22 + 8x + 34 = 180

14x + 12 = 180

14x = 168

x = 12

Jan 14-4:16 PM

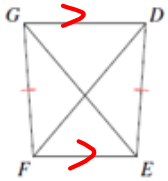
Theorem 6 -16

The diagonals of an isosceles trapezoid are congruent.

Jan 14-4:15 PM

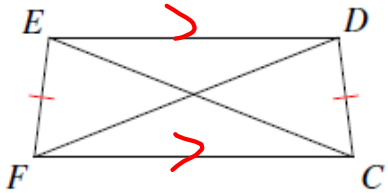
Target 2: Find the measures of the diagonals of an isosceles trapezoid.

a. DEFG is a trapezoid. Find EG if DF is 12.



EG = 12

b. CDEF is a trapezoid. Find x if EC = 20 and FD = 5x -10.



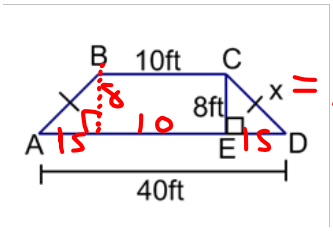
$5x - 10 = 20$
$+10 \quad +10$
$5x = 30$
$x = 6$

Jan 14-4:17 PM

Not a theorem, but still useful

You can turn an isosceles trapezoid into two congruent right triangles and a rectangle.

$40 - 10 = 30$



$= 17$

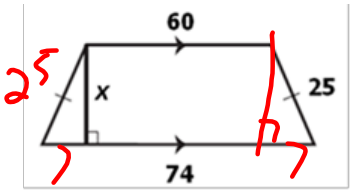
$8^2 + 15^2 = x^2$

$64 + 225 = x^2$

$\sqrt{289} = \sqrt{x^2}$

$x = 17$

Jan 14-4:18 PM



$$\begin{array}{r} 74 \\ -60 \\ \hline 14 \end{array}$$

$$7^2 + x^2 = 25^2$$

$$49 + x^2 = 625$$

$$x^2 = 576$$

$$x = 24$$

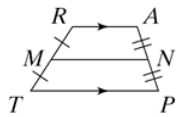
Jan 10-11:48 AM

Trapezoid Midsegment Theorem

(1) The midsegment of the trapezoid is parallel to the bases.

(2) The length of the midsegment of the trapezoid is half the sum of the lengths of the bases.

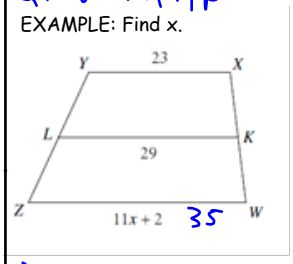
$\overline{MN} \parallel \overline{RA}$, $\overline{MN} \parallel \overline{TP}$

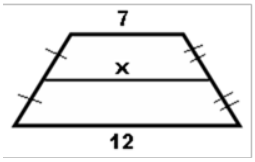


$MN = \frac{1}{2}(\overline{RA} + \overline{TP})$

$2MN = RA + TP$

EXAMPLE: Find x.





$x = 9.5$

$2(29) = 11x + 2 + 23$

$58 = 11x + 25$

$-25 \qquad -25$

$\frac{33}{11} = \frac{11x}{11}$

$x = 3$

Jan 14-4:20 PM