

Bell Ringer
Wednesday 1/22

$\triangle FAR \cong \triangle HIT$ List all corresponding angles and corresponding sides.

Given $\overline{AB} \cong \overline{CD}, \overline{AB} \parallel \overline{CD}$
Prove $\triangle ABC \cong \triangle CDA$

1. $\overline{AB} \cong \overline{CD}$ (S)
2. $\overline{AC} \cong \overline{AC}$ (S)
3. $\angle 1 \cong \angle 2$ (A)
4. $\triangle ABC \cong \triangle CDA$ (SAS)

Jan 2-4:11 PM

12.3 online hw due tomorrow
Quiz on 12.1-12.4 tomorrow

Jan 4-11:00 PM

Essential Question

What are the characteristics of equilateral and isosceles triangles?

Essential Question

Isosceles Triangle

vertex point

leg vertex angle leg
base angles

Feb 7-12:25 PM

Base Angles Theorem - Isosceles Triangle Theorem

If two sides of a triangle are congruent, then the angles opposite them are congruent.

If $\overline{AB} \cong \overline{AC}$, then $\angle B \cong \angle C$.

So, if then

Jan 4-11:08 PM

Converse of the Isosceles Triangle Theorem

Converse of the Base Angles Theorem

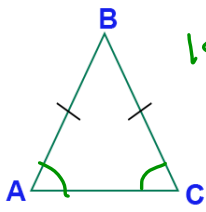
If two angles of a triangle are congruent, then the sides opposite them are congruent.

If $\angle B \cong \angle C$, then $\overline{AB} \cong \overline{AC}$.

So, if then

Jan 4-11:08 PM

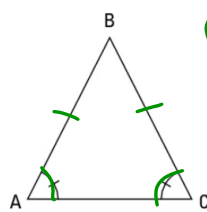
Name two congruent angles. How do you know?



Isosceles Triangle Theorem

Feb 7-12:28 PM

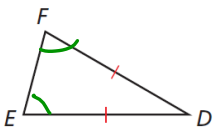
Name two congruent sides. How do you know?



Converse of Isosceles Δ Thm

Feb 7-12:29 PM

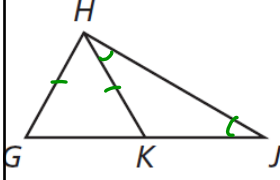
Name two congruent angles. How do you know?



Example 1

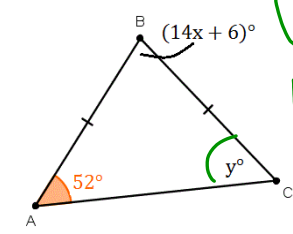
If $\overline{HG} \cong \overline{HK}$, then $\angle G \cong \angle K$.

If $\angle KHJ \cong \angle KJH$, then $\overline{HK} \cong \overline{KJ}$.



Monitoring Progress 1-2

Find the values of x and y



$y = 52^\circ$

$180 = 52 + 52 + 14x + 6$

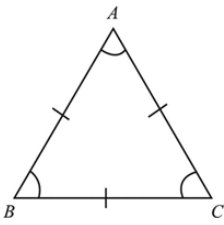
$180 - 104 = 76$

$14x + 6 = 76$

$14x = 70$ $x = 5$

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Equilateral Triangle



Jan 4-11:03 PM

Equilateral Triangles

<https://www.geogebra.org/m/mkq58hrw>

Solve for x. Find all side lengths and angle measures.

$x = 4$
 $AB = 11$
 $BC = 11$
 $AC = 11$
 $\angle A = 60^\circ$
 $\angle B = 60^\circ$
 $\angle C = 60^\circ$

$3x - 1 = 11$
 $3x = 12$
 $x = 4$
 $\frac{180}{3} = 60$

Feb 7-12:31 PM

Corollary to the Base Angles Theorem
 If a triangle is equilateral, then it is equiangular.

So, if then

Jan 5-1:19 PM

Corollary to the Converse of the Base Angles Theorem
 If a triangle is equiangular, then it is equilateral.

So, if then

Jan 5-1:19 PM

Find the measures of $\angle P$, $\angle Q$, and $\angle R$.

60°

Example 2

Find the length of ST for the triangle at the left.

Monitoring Progress 3

Find the values of x and y in the diagram.

$y = 4$

$x + 1 = 4$

$x = 3$

Example 3

Find the values of x and y in the diagram.

$x = 60$

$90 - 60 = 30$

$180 - 30 - 30 = 120$

$y = 120$

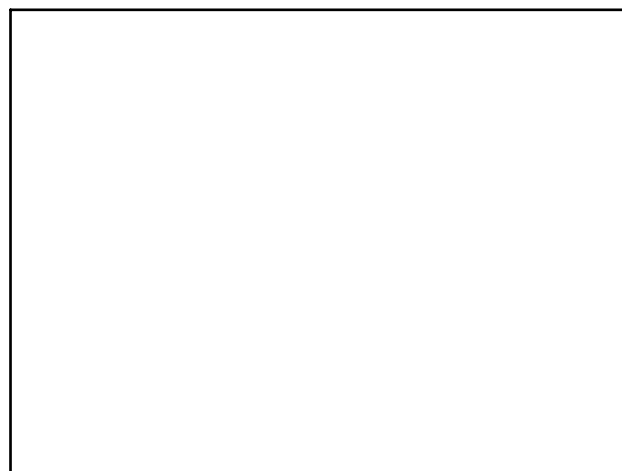
Monitoring Progress 4-5

due Friday - but try to finish before quiz tomorrow...

12.4 online hw

Pg 612-614 #s 1, 2, 3-19 odd, 22, 23, 26, 38, 42-44

Jan 4-11:28 PM



Jan 22-2:15 PM