

Key

**PROVE IT!**  
Geometry Chapter 4 Review

**Can you...** use the triangle sum properties?

**PROVE IT!**

Find the measure of the exterior angle.

1.

70 =  $(2x-8)^\circ$

plugin

$2x-8=x+31$   
 $x-8=31$   
 $x=39$   
 $2x-8=\text{Ext Angle}$   
 $2(39)-8=70$

2.

$38 + (7x+1) = 10x+9$   
 $7x+39 = 10x+9$   
 $39 = 3x+9$   
 $30 = 3x$   
 $10 = x$

plugin

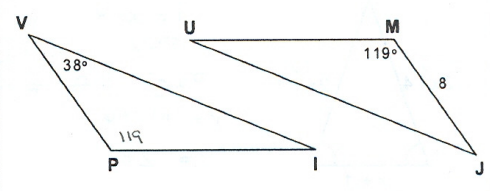
$(10x+9)^\circ = 109^\circ$

**Can you...** identify congruent parts of triangles?

**PROVE IT!**

In the diagram  $\triangle VPI \cong \triangle MJU$ . Complete the statement.

- $m\angle P = 119^\circ$
- $m\angle J = 38^\circ$
- $PV = 8$
- $\overline{PI} \cong \overline{MU}$
- $\triangle UJM \cong \triangle IVP$
- $\triangle PVI \cong \triangle MJU$



**Can you...** write a proof for corresponding parts?

**PROVE IT!**

1. Prove that  $\overline{MS} \cong \overline{RT}$

STATEMENTS	REASONS
$\angle S \cong \angle R$	Given
$\overline{SA} \cong \overline{RA}$	Given
$\angle MAS \cong \angle TAR$	Vertical $\angle$ s Theorem
$\triangle MAS \cong \triangle TAR$	ASA
$\overline{MS} \cong \overline{RT}$	CPCTC

**Can you...** prove two triangles are congruent?

**PROVE IT!**

1.  $\triangle SPQ \cong \triangle TPQ$

$\overline{PQ} \cong \overline{PQ}$

$\triangle SPQ \cong \triangle TPQ$   
by SAS

2.  $\triangle ABC \cong \triangle CDA$

$\overline{AC} \cong \overline{AC}$

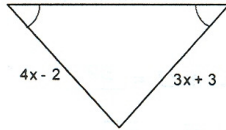
$\triangle ABC \cong \triangle CDA$   
by HL

\*  $\overline{AC}$  is Hyp.  
 $\overline{AB}$  and  $\overline{CD}$  are Legs  
 Both  $\triangle$ 's are Rt.  $\triangle$ 's

**Can you...** conclude information from isosceles and equilateral triangles?

**PROVE IT!**

1. Find the value of x.

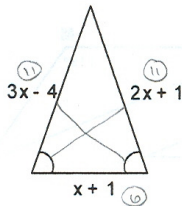


$$4x-2 = 3x+3$$

$$x-2 = 3$$

$$x = 5$$

2. Find the perimeter.



$$2x+1 = 3x-4$$

$$1 = x-4$$

$$5 = x$$

Plug in 5 for x...

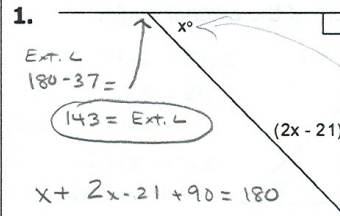
$$P = 11+11+6$$

$$P = 28$$

**Can you...** use the exterior angle theorem?

**PROVE IT!**

Find the measure of the exterior angle.



$$x + 2x - 21 + 90 = 180$$

$$3x - 21 + 90 = 180$$

$$3x - 21 = 90$$

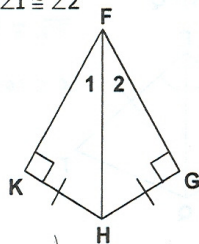
$$3x = 111$$

$$x = 37$$

**Can you...** write a proof for corresponding parts?

**PROVE IT!**

1. Prove that  $\angle 1 \cong \angle 2$



STATEMENTS	Reasons
1. $KH \cong GH$	1. Given
2. $\angle FKH$ and $\angle FGH$ are Rt. $\angle$ s	2. Given
3. $\angle FKH \cong \angle FGH$	3. All Rt. $\angle$ s are $\cong$
4. $FH \cong FH$	4. Reflexive Prop. of Segment $\cong$
5. $\triangle FKH \cong \triangle FGH$	5. HL
6. $\angle 1 \cong \angle 2$	6. CPCTC

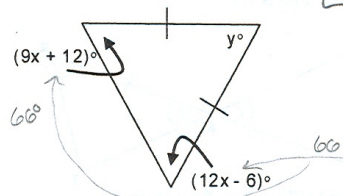
**Can you...** use information given an isosceles triangle?

**PROVE IT!**

1. Find the value of x and y.

$$x = 6$$

$$y = 48$$



①  $12x-6 = 9x+12$

$$3x-6 = 12$$

$$3x = 18$$

$$x = 6$$

② Plug value for x into 2 angles and find their values

$12x-6$	$9(6)+12$
$12(6)-6$	$54+12$
$72-6$	$66$
$66$	$66$

③ All 3  $\angle$ s Add up to 180...

$$66+66+y = 180$$

$$132+y = 180$$

$$y = 48$$