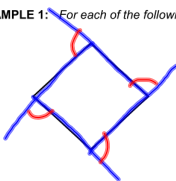


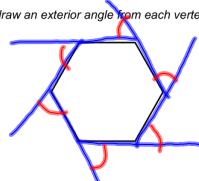
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TERM	DESCRIPTION	EXAMPLE
EXTERIOR ANGLES	Angles formed by a side of a polygon and the extension of an adjacent side.	

EXAMPLE 1: For each of the following polygons, draw an exterior angle from each vertex.

a. 

b. 

How does the number of exterior angles compare to the number of sides of the polygon?

Same

Feb 2-9:05 AM

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The sum of the measures of the EXTERIOR angles of a convex polygon with n sides is:

$m\angle 1 + m\angle 2 + \dots + m\angle n = 360^\circ$

EXAMPLE 2: Find the SUM of the measures of the EXTERIOR angles of an undecagon.

Sum of exterior angles = 360°

Geometry Unit 7- Properties of PolygonsPage 443

Notes: EXTERIOR ANGLES OF POLYGONS

The measure of EACH exterior angle of a regular polygon with n sides is:

Feb 2-9:07 AM

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The measure of EACH exterior angle of a regular polygon with n sides is:

$\frac{360}{n}$

EXAMPLE 3: Find the measure of ONE EXTERIOR ANGLE of a regular undecagon.

Measure of exterior angle = 32.73° $\frac{360}{11} = 32.73^\circ$

EXAMPLE 4: Determine the angle measures of regular polygons.

		Interior Angles		Exterior Angles	
		Sum of the interior angles	Measure of each interior angle	Sum of the exterior angles	Measure of each exterior angle
a.	Nonagon	$(9-2)180$ 1260	$\frac{1260}{9}$ 140	360	$\frac{360}{9}$ 40
b.	Decagon	$(10-2)180$ 1440	$\frac{1440}{10}$ 144	360	$\frac{360}{10}$ 36
c.	Dodecagon	$(12-2)180$ 1800	$\frac{1800}{12}$ 150	360	$\frac{360}{12}$ 30

Feb 2-9:08 AM

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EXAMPLE 4: Determine the angle measures of regular polygons.

		Interior Angles		Exterior Angles	
		Sum of the interior angles	Measure of each interior angle	Sum of the exterior angles	Measure of each exterior angle
a.	Nonagon	$(9-2)180$ 1260	$\frac{1260}{9}$ 140	360	$\frac{360}{9}$ 40
b.	Decagon	$(10-2)180$ 1440	$\frac{1440}{10}$ 144	360	$\frac{360}{10}$ 36
c.	Dodecagon	$(12-2)180$ 1800	$\frac{1800}{12}$ 150	360	$\frac{360}{12}$ 30

EXAMPLE 5: The measure of an exterior angle of a regular polygon is 30°. Find the number of sides.

Feb 2-9:13 AM

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a.	Nonagon				
b.	Decagon				
c.	Dodecagon				

EXAMPLE 5: The measure of an exterior angle of a regular polygon is 30°. Find the number of sides.

Number of sides = 12 $\frac{360}{30} = 12$

Geometry Unit 7- Properties of PolygonsPage 444

Feb 2-9:15 AM