

# Chapter 7 - CP Geometry

Starts Feb. 24 Period 2--- 2025

# Objectives for Week: Feb. 24-28

## Section 7.1: Angles of Polygons

**Common Core State Standards:** preparing for G.CO.C.11

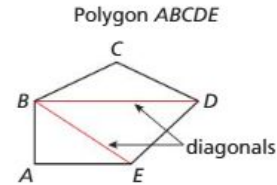
**Learning Target:** Find angle measures of polygons.

**Success Criteria**

- Find the sum of the interior angle measures of a polygon.
- Find interior angle measures of polygons.
- Find exterior angle measures of polygons.

**Vocabulary:** diagonal, equilateral polygon, equiangular polygon, regular polygon

In a polygon, two vertices that are endpoints of the same side are called *consecutive vertices*. A **diagonal** of a polygon is a segment that joins two *nonconsecutive vertices*.



$A$  and  $B$  are consecutive vertices.  
Vertex  $B$  has two diagonals,  $\overline{BD}$  and  $\overline{BE}$ .

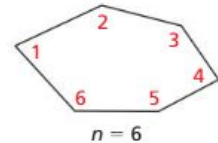
As you can see, the diagonals from one vertex divide a polygon into triangles. Dividing a polygon with  $n$  sides into  $(n - 2)$  triangles shows that the sum of the measures of the interior angles of a polygon is a multiple of  $180^\circ$ .

## THEOREM

### 7.1 Polygon Interior Angles Theorem

The sum of the measures of the interior angles of a convex  $n$ -gon is  $(n - 2) \cdot 180^\circ$ .

$$m\angle 1 + m\angle 2 + \cdots + m\angle n = (n - 2) \cdot 180^\circ$$



## Section 7.2: Properties of Parallelograms

**Common Core State Standards:** G.CO.C.11

**Learning Target:** Prove and use properties of parallelograms.

**Success Criteria**

- Prove properties of parallelograms.
- Use properties of parallelograms.
- Solve problems involving parallelograms in the coordinate plane.

**Vocabulary:** parallelogram

# Week of Feb. 24-28: CP Geometry Chapter 7 Start

**Monday** - Opener - Watch Edpuzzle ( 6 minutes and take notes)

Notes continue with copying down chart and discussion with REGULAR polygons and exterior angles. Use soft page 111 for examples to copy down.

**Tuesday** - Work Day with Dynamic Classroom problems 7.1 #1,2,5,6,9-24

**Wednesday** - Exit Ticket for 7.1 followed by review of last weeks application trip problems. Assign problem for presentation on Monday. Then draw parallelogram to give way to discussion on properties and review parallel lines and angles. Discuss the properties and theorems in 7.2 such as diagonals from proof involving congruent triangles. Use pg 113 from soft book for examples.

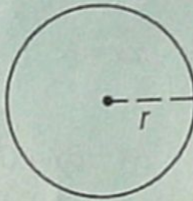
**Thursday** - Work day with Dynamic Classroom problems 7.2 # 1-3, 7-10

**Friday** -Notes if given a quadrilateral with opposite angles congruent, then can you determine if a parallelogram? Converse of theorems holds true in biconditionals so every theorem in 7.2 has a converse to prove a parallelogram and link to other theorems. Add the one set of opposite sides congruent and parallel also makes a parallelogram show by drawing also. Use soft book pg 115 for examples worked out.

# Chart of polygon info:

REGULAR						
# of Sides	Name of Polygon	# of Triangles Inside	Total Degrees Inside	Degrees in One Interior Angle	Degrees in One Exterior Angle	Total Exterior Angles
3	Triangle	1	180	60	120	360
4	Quadrilateral	2	360	90	90	360
5	Pentagon	3	540	108	72	360
6	Hexagon	4	720	120	60	360
7	Heptagon	5	900	128.6	51.4	360
8	Octagon	6	1080	135	45	360
9	Nonagon	7	1260	140	40	360
10	Decagon	8	1440	144	36	360
12	DoDecagon	10	1800	150	30	360
N	n-gon	n-2	$(n-2)*180$	SUM/N	360/N	360

# State Geometry Formula Sheet --- Polygon Interior Angle Sum



$$C = 2\pi r$$
$$A = \pi r^2$$

Polygon

$$n = 6$$



Sum of angle measures =  $180(n - 2)$ ,  
where  $n$  = number of sides

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Self-Assessment Learning Target Math Tools

Listen

Find the sum of the measures of the interior angles of a convex nonagon.

The sum of the measures of the interior angles is  °.

Sum Int.  $9 = n$   
 $(n-2)(180)$   
 $7(180)$

1 2 3 4 5 6 7 8 9 10 Next

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