March 31, 2016

Geometry

Notes Section 8.1

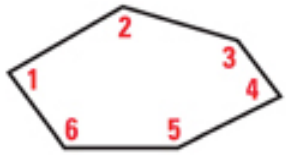
Find Angle Measures in Polygons

Diagonal: _____

THEOREM 8.1 Polygon Interior Angles Theorem

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

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



$n = 6$

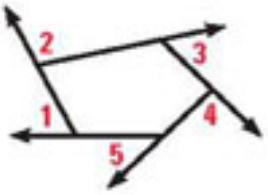
COROLLARY TO THEOREM 8.1 Interior Angles of a Quadrilateral

The sum of the measures of the interior angles of a quadrilateral is 360°.

THEOREM 8.2 Polygon Exterior Angles Theorem

The sum of the measures of the exterior angles of a convex polygon, one angle at each vertex, is 360°.

$m\angle 1 + m\angle 2 + \cdots + m\angle n = 360°$



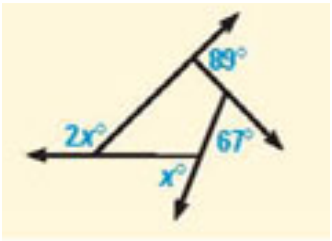
$n = 5$

EXAMPLE 1 Find the sum of the measures of the interior angles of a convex octagon.

EXAMPLE 2 The sum of the measures of the interior angles of a convex polygon is 900°. Classify the polygon by the number of sides.

EXAMPLE 3 Find the value of x.

EXAMPLE 4 What is the value of x?



EXAMPLE 5 The trampoline show is shaped like a rectangular dodecagon.

a) Find the measure of each interior angle

b) Find the measure of each exterior angle