
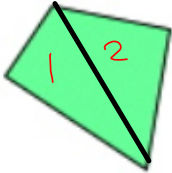
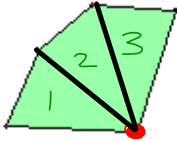
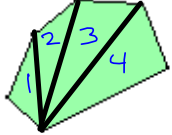


6.5 Interior and Exterior Angles of Polygons

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8.6.2: Interior Angle Sums

1. Complete the chart.

Diagram	Number of sides	Sum of interior angles	Understanding
	3	180°	The sum of the angles in any triangle is 180°.
	4	$2 \times 180 = 360^\circ$	2 triangles
	5	$3 \times 180 = 540$	3 triangles
	6	$4 \times 180 = 720$	4 triangles
	n	$(n-2) \times 180$ # of Δ	

7

$$5 \times 180^\circ =$$

5



The sum of the interior angles of a polygon with n sides is:

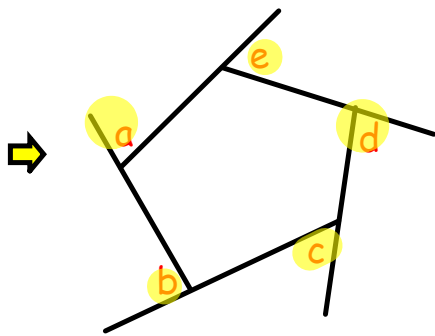
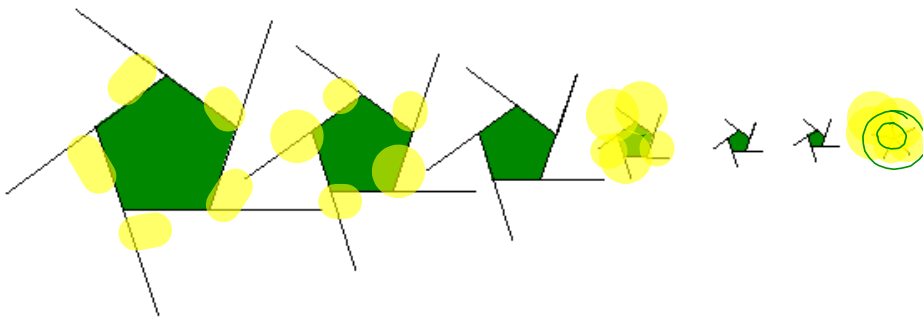
$$S = (n - 2) \times 180^\circ$$

Sum of interior angles

of triangles

$n = \#$ of sides

Consider the exterior angles:

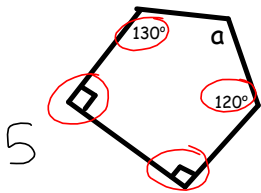


The sum of the exterior angles of any polygon is 360° .

$$a + b + c + d + e = 360^\circ$$

Ex. 2: Find the unknown angles.

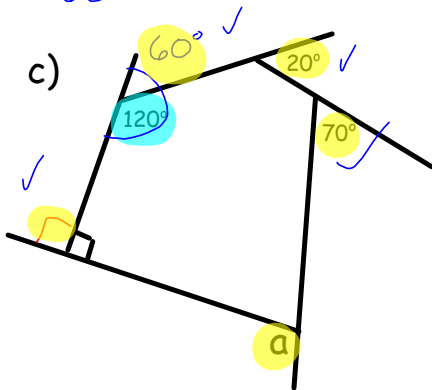
a)



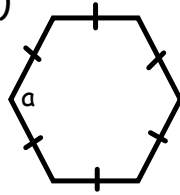
Inside Angles
 $(5-2) \times 180$
 $= 3 \times 180$
 $= 540^\circ$

$a = 540 - 130 - 120 - 90 - 90$
 $a = 110^\circ$

$180 - 120$
 $= 60^\circ$



b)



Note

This is a hexagon because it has 6 sides.

It's a regular hexagon because all of its Sides and angles are equal.

Inside Angles
 $= (6-2) \times 180$
 $= 4 \times 180$
 $= 720^\circ$

Each angle $a = \frac{720}{6}$
 $a = 120^\circ$

$a = 360 - 70 - 20 - 60 - 90$
 $a = 120^\circ$

CLASSWORK

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Inside

$$\text{Total} \\ = (n-2) \times 180$$



of sides



Outside

$$\text{Total} = 360^\circ$$