

Angles in Polygons

10th Grade

Two formulas that handle any polygon, however many sides.

The interior angles of an n-sided polygon sum to $(n - 2) \times 180^\circ$. The exterior angles always sum to 360° , whatever n is.

$$\text{interior sum} = (n - 2)180^\circ$$

Triangle (n=3)

$(3-2) \times 180.$

180°

Quadrilateral (n=4)

$(4-2) \times 180.$

360°

Regular hexagon, each angle

$720 \div 6.$

120°

Exterior angles, any polygon

Always. Walk round the shape and you turn one full circle.

360°

Regular means all sides AND all angles equal. Only then can you divide the sum evenly.