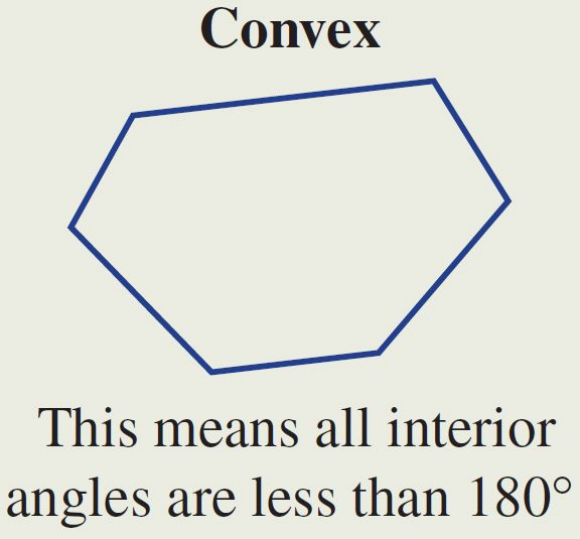
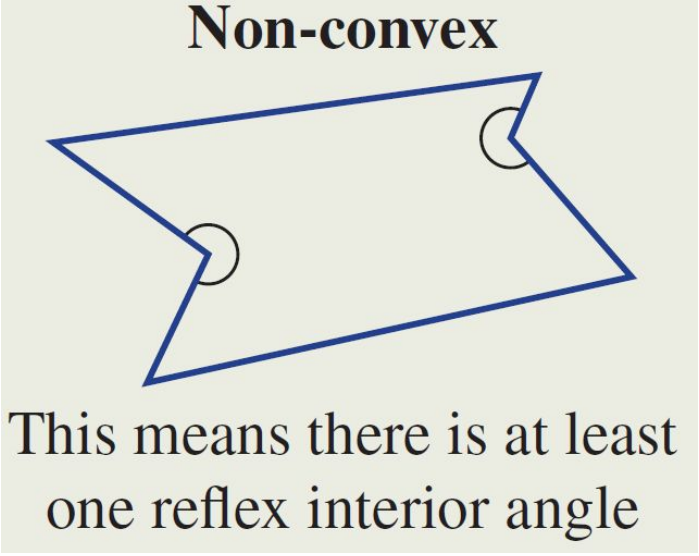
POLYGONS

Polygons are shapes with straight sides.

Convex polygons have all vertices pointing outwards	Non-convex polygons have at least one vertex pointing inwards and at least one reflex interior angle.
	

POLYGONS are named according to their number of sides

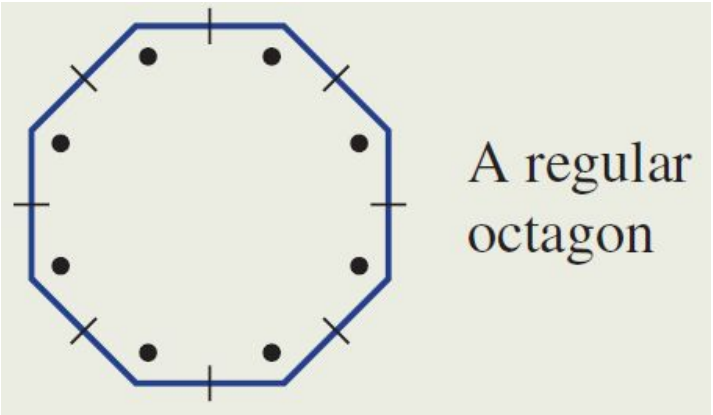
Number of sides	Name
3	Triangle
4	Quadrilateral
5	Pentagon
6	Hexagon
7	Heptagon
8	Octagon
9	Nonagon
10	Decagon
11	Undecagon
12	Dodecagon

POLYGONS

The angle sum S of a polygon with n sides is given by the rule:

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

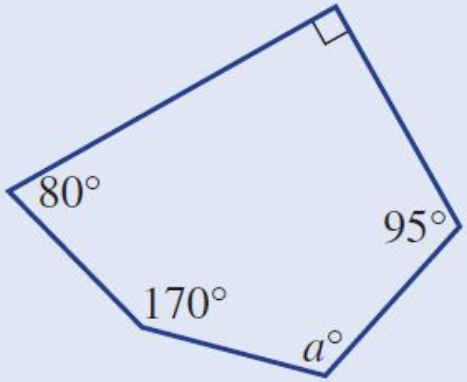
A regular polygon has sides of equal length and equal interior angles.



A regular octagon

POLYGONS

Find the value of a in this pentagon.



SOLUTION

$$S = (n - 2) \times 180°$$
$$= (5 - 2) \times 180°$$
$$= 540°$$

$$a + 170 + 80 + 90 + 95 = 540$$
$$a + 435 = 540$$
$$a = 105$$

EXPLANATION

First calculate the angle sum of a pentagon using $n = 5$.

Sum all the angles and set this equal to the angle sum of 540°. Subtract 435 from both sides.