



The sum of the exterior angles of a convex polygon is  $360^\circ$ .

A polygon has  $n$  interior angles  $n_a = (176 - 4a)^\circ$ , where  $n_a$  is the size of the interior angle  $a$ , starting with angle  $n_1 = 172^\circ$ . The exterior angle added to the interior angle forms a straight angle. The sum of the exterior angles of a convex polygon is  $360^\circ$

$$360^\circ = \sum_{a=1}^n (180^\circ - (n_a))$$

$$360^\circ = \sum_{a=1}^n (180^\circ - (176 - 4a))$$

$$360 = 8 + 12 + 16 + 20 + 24 + 28 + 32 + 36 + 40 + 44 + 48 + 52$$

$$n_{a=n} \rightarrow 52 = 180 - (176 - 4a)$$

$$a = n = 12$$