

April 4th

How many regular polygons have integral interior angles?

The interior angle of a n sided polygon can be found using several formulae.

If we use the facts that:

- a) The exterior angle is always $360^\circ \div$ number of sides
- b) The interior angle is $180 -$ exterior angle

Then we can derive the formula:

$$\text{Interior angle} = 180 - \frac{360}{n}$$

Hence will have integral values for all n which are factor of 360 and $n > 2$

Factors of 360 greater than 2 are:

3, 4, 5, 6, 8, 9, 10, 12, 15, 18, 20, 24, 30, 36, 40, 45, 60, 72, 90, 120, 180, 360

Which is **22** in total