

3.18 Regular Polygon

Side: a

Number of sides: n

Internal angle: α

Slant height: m

Radius of inscribed circle: r

Radius of circumscribed circle: R

Perimeter: L

Semiperimeter: p

Area: S

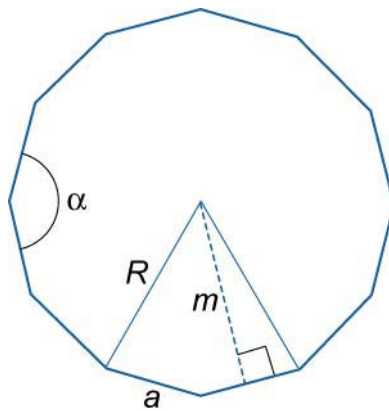


Figure 29.

254. $\alpha = \frac{n-2}{2} \cdot 180^\circ$

255. $\alpha = \frac{n-2}{2} \cdot 180^\circ$

256. $R = \frac{a}{2 \sin \frac{\pi}{n}}$



$$257. \quad r = m = \frac{a}{2 \tan \frac{\pi}{n}} = \sqrt{R^2 - \frac{a^2}{4}}$$

$$258. \quad L = na$$

$$259. \quad S = \frac{nR^2}{2} \sin \frac{2\pi}{n},$$

$$S = pr = p \sqrt{R^2 - \frac{a^2}{4}},$$

$$\text{where } p = \frac{L}{2}.$$