Regular Polygons

For the following formulas, n is the number of sides in the polygon and s is the length of each side. q is the measure of one of the interior angles. The radius of the inscribed circle is r, and the radius of the circumscribed radius is R.

Sum of interior angles: 180(n-2)°

Interior angle measure: $q = \frac{180(n-2)}{n}$

Area: $K = \frac{rns}{2}$

Polygon	***n***	***K***	***r***	***R***
Triangle	3	$\frac{s^2\sqrt{3}}{4}$	$\frac{s\sqrt{3}}{6}$	$\frac{s\sqrt{3}}{3}$
Square	4	s^2	$\frac{s}{2}$	$\frac{s}{2}\sqrt{2}$
Hexagon	6	$\frac{3s^2\sqrt{3}}{2}$	$\frac{s\sqrt{3}}{2}$	s
Octagon	8	$2s^2(1+\sqrt{2})$	$s\sqrt{\left(1+\frac{\sqrt{2}}{2}\right)}$	$\frac{s\sqrt{3-2\sqrt{2}}}{2}$