

PROBLEMS



The diagram shows a circle with a polygon inscribed within it. The vertices of the polygon are located on the circumference of the circle. The diagram is used to illustrate a problem involving the geometry of a circle and an inscribed polygon.

Problem 1: A circle with center O and radius r has a chord AB of length $2a$. A point P is chosen on the minor arc AB such that $\angle APB = 90^\circ$. Find the length of OP .

Problem 2: A circle with center O and radius r has a chord AB of length $2a$. A point P is chosen on the major arc AB such that $\angle APB = 90^\circ$. Find the length of OP .

Problem	Answer
1	$\frac{r^2 - a^2}{r}$
2	$\frac{r^2 + a^2}{r}$