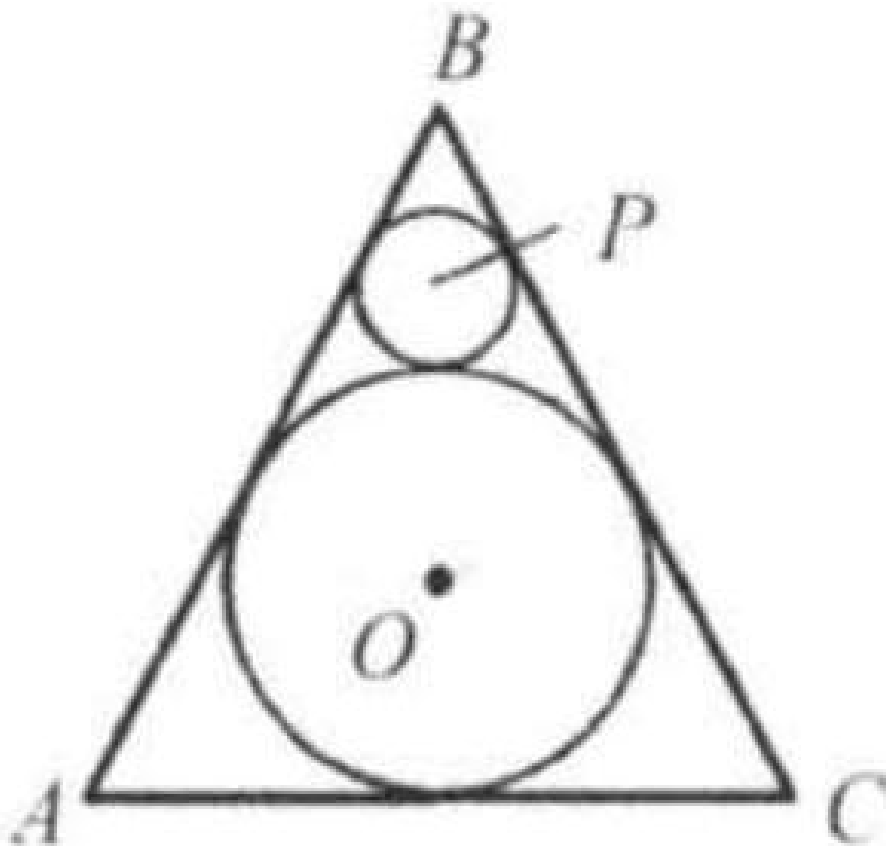


Problem

Circle O of radius 45 is inscribed in equilateral triangle ABC . Circle P is tangent to circle O and segments AB and BC . Find the area of circle P .

- (A) 245π
- (B) 625π
- (C) 225
- (D) 225π
- (E) 700



Solution

(D).

Draw $PF \perp AB$ and $OE \perp AB$.

Connect BD .

Triangle BEO is a $30^\circ - 60^\circ - 90^\circ$ triangle and $BO = 2OE$. $OE = 45$ and $BO = 2OE = 90$, and $BD = 90 + 45 = 135$.

Let $PF = r$.

