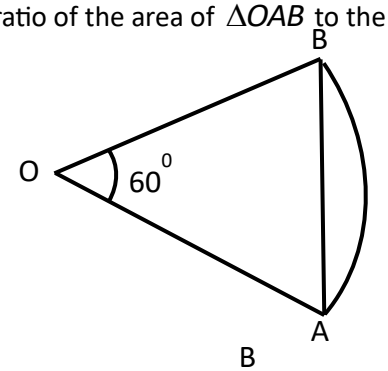
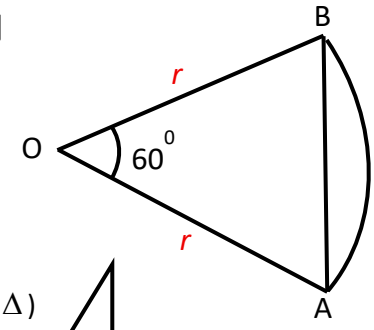
GEOMETRY EXAMPLE 1

OAB is a sector of a circle. $\angle AOB = 60^0$. What is the ratio of the area of ΔOAB to the area of sector OAB?



A. $2:3$ B. $3:\pi$ C. $3\sqrt{2}:2$ D. $3\sqrt{2}:\pi$

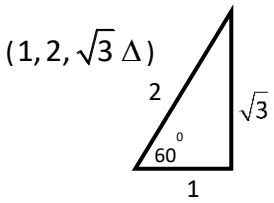
SOLUTION



Let the radius of the circle be *r*.

Then area of $\Delta OAB = \frac{1}{2}r^2 \sin 60^0$

$= \frac{1}{2}r^2 \frac{\sqrt{3}}{2}$



$\frac{\text{Area of sector } OAB}{\text{Area of circle}} = \frac{60^0}{360^0} = \frac{1}{6}$

$\therefore$ Area of sector $OAB = \frac{1}{6}\pi r^2$

Area of ΔOAB : Area of sector $OAB = \frac{\sqrt{3}}{4}r^2 : \frac{1}{6}\pi r^2$

$= 3\sqrt{3} : 2\pi$

So, the correct answer is D.