

11 Fig. 11 shows the curve with parametric equations

$$x = 2\cos\theta, \quad y = \sin\theta, \quad 0 \leq \theta \leq 2\pi.$$

The point P has parameter $\frac{1}{4}\pi$. The tangent at P to the curve meets the axes at A and B.

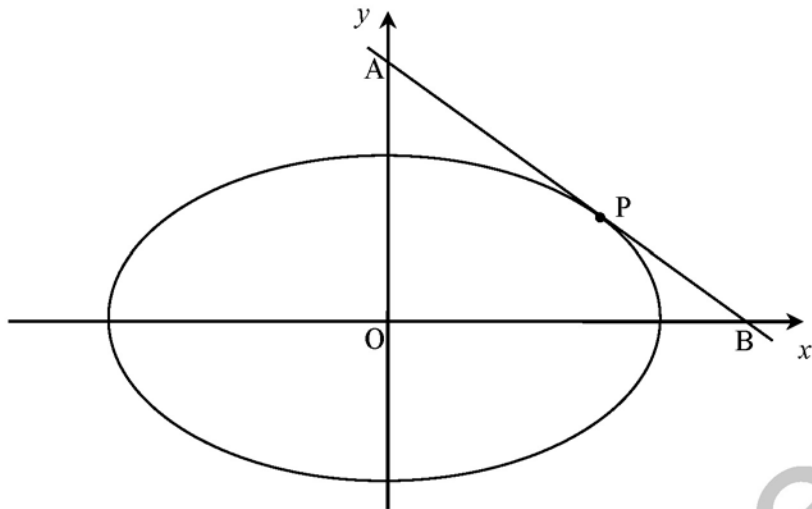


Fig. 11

- (a) Show that the equation of the line AB is $x + 2y = 2\sqrt{2}$. [6]
- (b) Determine the area of the triangle AOB. [3]