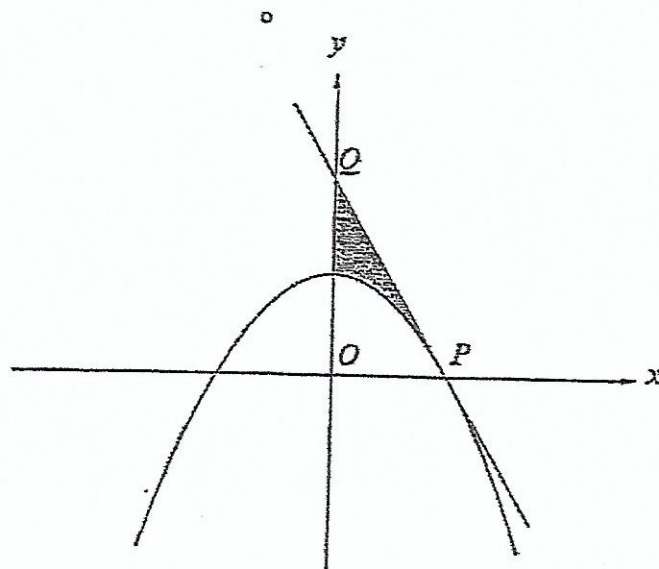


126. (b)



The diagram shows a sketch of the curve  $y = 9 - x^2$  which intersects the positive  $x$ -axis at the point  $P(a, 0)$ .

(i) Find the value of  $a$ .

The tangent to the curve at  $P$  intersects the  $y$ -axis at the point  $Q(0, b)$ .

(ii) Show that  $b = 18$ .

(iii) Find the area of the shaded region.

[10]

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