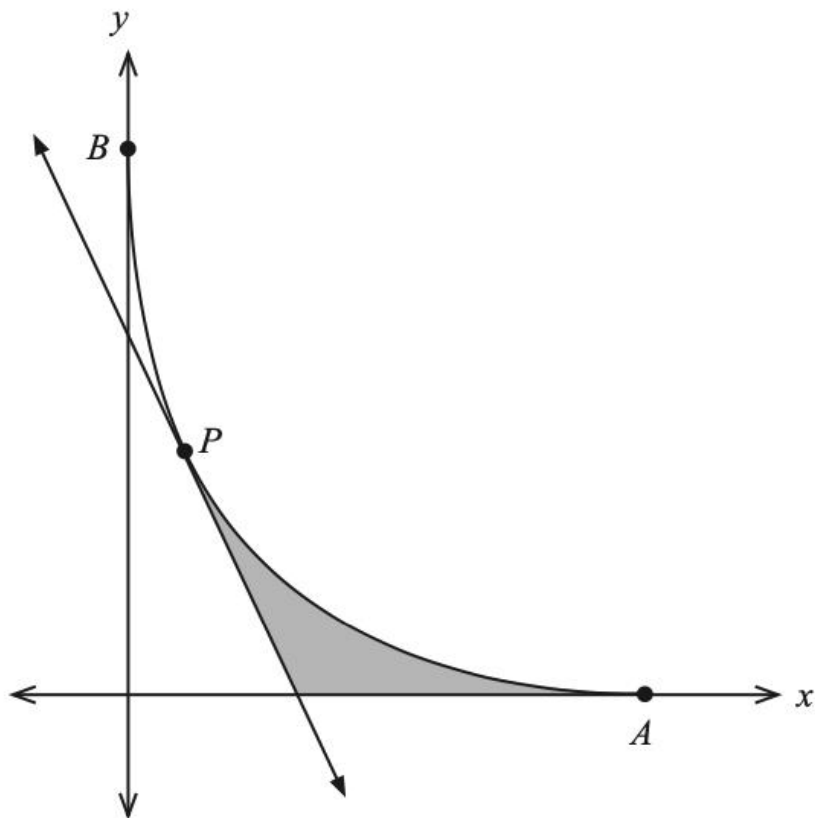


Question 12**(8 marks)**

The diagram shows the curve with equation $\sqrt{x} + \sqrt{y} = 3$ where points A , B are the intercepts of this curve. A tangent is drawn to the curve at point $P(1,4)$.



- (a) Show that the equation of the tangent is $2x + y = 6$.

(3 marks)

The shaded region on the diagram is bounded by the curve, the tangent and the x axis.

- (b) Determine the exact area of the shaded region. (5 marks)