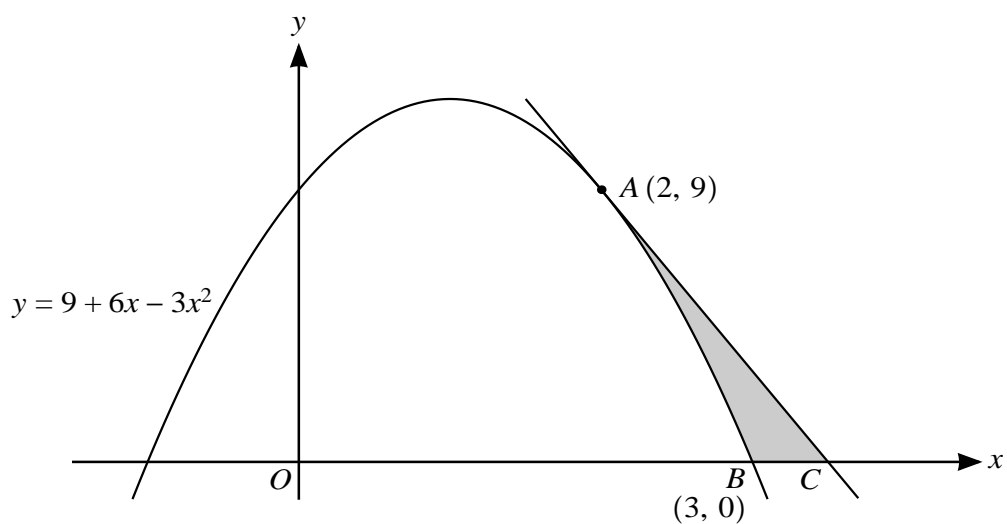


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Points $A(2, 9)$ and $B(3, 0)$ lie on the curve $y = 9 + 6x - 3x^2$, as shown in the diagram. The tangent at A intersects the x -axis at C . Showing all necessary working,

(i) find the equation of the tangent AC and hence find the x -coordinate of C , [4]

(ii) find the area of the shaded region ABC . [5]