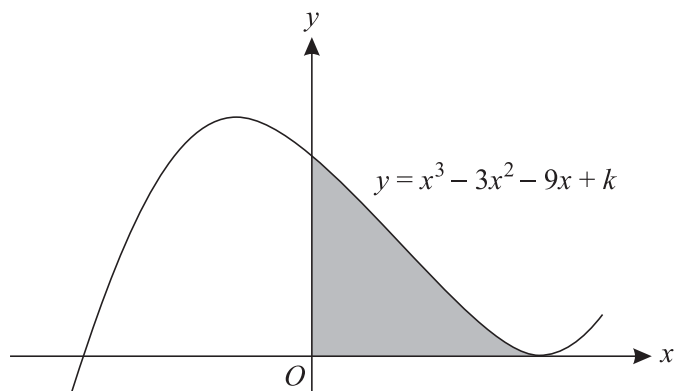


10



The diagram shows the curve $y = x^3 - 3x^2 - 9x + k$, where k is a constant. The curve has a minimum point on the x -axis.

- (i) Find the value of k . [4]
- (ii) Find the coordinates of the maximum point of the curve. [1]
- (iii) State the set of values of x for which $x^3 - 3x^2 - 9x + k$ is a decreasing function of x . [1]
- (iv) Find the area of the shaded region. [4]