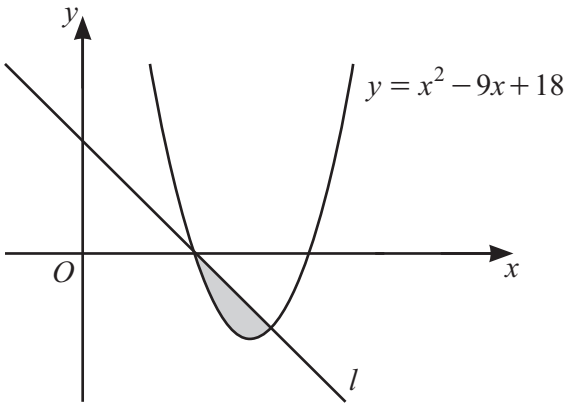
10



The diagram shows the curve $y = x^2 - 9x + 18$ and the line l, which is the normal to this curve at the point where $x = 5$.

Find the area of the shaded region. [11]

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Continuation of working space for Question 10.

11 The number of permutations of n items taken 4 at a time is equal to $\frac{1}{6}\times$ the number of permutations of $2n$ items taken 3 at a time.

(a) Show that n satisfies the equation $3n^2 - 19n + 20 = 0$. [4]

(b) Hence find the value of n. [2]

Question 12 is printed on the next page.

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