

National 5 Maths  
SQA 2018 Paper 1  
Question 19

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(a) (i) Express  $x^2 - 6x - 81$  in the form  $(x - p)^2 + q$ . 2

(ii) Hence state the equation of the axis of symmetry of the graph of  
 $y = x^2 - 6x - 81$ . 1

(b) The roots of the equation  $x^2 - 6x - 81 = 0$  can be expressed in the form  
 $x = d \pm d\sqrt{e}$ .

Find, algebraically, the values of  $d$  and  $e$ . 4

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Answer:

(a) (i)  $(x - 3)^2 - 90$

(ii)  $x = 3$

(b)  $d = 3, e = 10$