

- 1 (a)** Write  $3x^2 + 24x + 5$  in the form  $a(x + b)^2 + c$ , where  $a$ ,  $b$  and  $c$  are constants to be determined. **[3]**

The finite region  $R$  is enclosed by the curve  $y = 3x^2 + 24x + 5$  and the  $x$ -axis.

- (b)** State the inequalities that define  $R$ , including its boundaries. **[2]**