Marked example 1

Paper 1 style · No calculator

1 6 marks SL 2.6 ●○○ Routine

Let $f(x) = x^2 + 6x + 5$.

(a) Write $f(x)$ in the form $(x - h)^2 + k$. **[2]**

(b) Write down the coordinates of the vertex of the graph of f. **[1]**

(c) Find the zeros of f. **[2]**

(d) Write down the range of f. **[1]**

MARKSCHEME (a)

$(x + 3)^2 - 9 + 5$ **(M1)**

$(x + 3)^2 - 4$ **A1**

Total 2 marks

MARKSCHEME (b)

$(-3, -4)$ **A1**

Total 1 mark

MARKSCHEME (c)

$(x + 1)(x + 5) = 0$ **(M1)**

$x = -1,\ x = -5$ **A1**

Total 2 marks

Note Or from (a): $(x + 3)^2 = 4$, $x + 3 = \pm 2$.

MARKSCHEME (d)

$f(x) \geq -4$ **A1**

Total 1 mark

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