2.7 Completing the Square

Question Paper

Course	Edexcel IGCSE Maths
Section	2. Equations, Formulae & Identities
Topic	2.7 Completing the Square
Difficulty	Hard

Time allowed: 20

Score: /14

Percentage: /100

Question 1

(a) Write $2x^2 + 16x + 35$ in the form $a(x + b)^2 + c$ where a, b, and c are integers.

[3 marks]

(b) Hence, or otherwise, write down the coordinates of the turning point of the graph of $y = 2x^2 + 16x + 35$

[1 mark]

Question 2

(a) Write the quadratic function $y = 4x^2 + 8x - 5$ in the form $y = a(x + b)^2 + c$ where a, b and c are integers to be found.

[2 marks]

(b) Write down the minimum point on the graph of $y = 4x^2 + 8x - 5$.

[1 mark]

Question 3

(a) Find the minimum value of the function $f(x) = x^2 + 4x + c$, giving your answer in terms of c.

[2 marks]

(b) Given that $c = 5$, hence, or otherwise, show that the function $f(x) = x^2 + 4x + c$ has no real roots.

[2 marks]

Question 4

(a) Write the quadratic function $y = -6x^2 + 8x - 5$ in the form $y = a - b(x + c)^2$ where a, b and c are constants to be found.

[2 marks]

(b) Write down the maximum point on the graph of $y = -6x^2 + 8x - 5$.

[1 mark]