1.

$$f(x) = 2x^3 - 7x^2 + 5x + 4$$

(a) Use the remainder theorem to find the remainder when $f(x)$ is divided by $(x - 2)$

(2)

(b) Hence, or otherwise, find the quotient when $f(x)$ is divided by $(x - 2)$

(2)

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Question 1 continued

(Total for Question 1 is 4 marks)

2. **In this question you must show all stages of your working.**
Solutions relying entirely on calculator technology are not acceptable.

(i) Solve, for $0 < x \leqslant 2\pi$, the equation

$$1 + \sin^2 x + \cos x = 0$$

(3)

(ii) Solve, for $0 < \theta < 180°$, the equation

$$\sin(\theta + 60°) = 4\cos(\theta + 60°)$$

giving the answer to one decimal place.

(3)

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