

| Q    | Marking Instructions  | AO   | Marks    | Typical Solution  |
|------|---|------|----------|---|
| 3(a) | Substitutes $x = -1$ or $x = 3$ into $f(x)$ to obtain one equation or uses identity<br>eg $f(x) \equiv (x + 1)(x - 3)(ax + b)$            | 3.1a | M1       | $x = -1 \quad -p - 3 + 8 + q = 0$ $x = 3 \quad 27p - 27 - 24 + q = 0$ $p = 2 \text{ and } q = -3$ |
|      | Obtains two correct equations by substitution method ACF<br>or obtains $a = 2, b = 1$   | 1.1b | A1       |   |
|      | Solves to find $p$ and $q$ CAO  | 1.1b | A1       |   |
| 3(b) | Uses inspection, division by quadratic factor or repeated division<br>or finds third root $x = -\frac{1}{2}$<br>PI by $(x + \frac{1}{2})$ | 1.1a | M1       | $(x + 1)(x - 3) = x^2 - 2x - 3$ $(x^2 - 2x - 3)(2x + 1)$ $(x + 1)(x - 3)(2x + 1)$                 |
|      | Completes factorisation   | 1.1b | A1       |   |
|      | <b>Total</b>  |      | <b>5</b> |   |