Answer Key to the Question Bank

1. a. iii   b. iv   c. iii   d. iv   e. ii

2. a. i. Yes   ii. No   iii. Yes   iv. No

   b. i. $-2 + 20xy^3 + 3x^2y^2 - 15x^3y$ ii. $-2 - 15x^3y + 3x^2y^2 + 20xy^3$

   c. i. $4x^4 + 2x^3 + 8x^2 + 3x + 10$ ii. $35x^2y^2 + 23x^2y - 30xy^2 + 4xy + 11$ iii. $5p^3 - p^2 - q^2 + 1$

   d. i. $-x^3 + 3x^2 + 10x - 4$ ii. $8p^2q + 11pq^2 + 10pq + 14$ iii. $3x^3 + 6x^2 + 2x - 5$

   e. i. $-6x^3y^2$ ii. $-4x^3 + 8x^2 - 5x + 1$ iii. $x^3 - y^3 + x^2y - xy^2$

   f. i. $Q = 2x - 1, R = -4x + 5$ ii. $Q = 10y^2 + 10y + 5, R = 10$ iii. $Q = 2x^2 + x, R = -x^2 + x$

   g. i. $Q = 2x^2 - 1, R = 0$; Remainder is 0, so $3x + 1$ is a factor.

   ii. $Q = 4x^2 - 2x + 1, R = 0$; Remainder is 0, so $x + 1$ is a factor.

   h. $k = -2$ i. i. $2x^2 + 7x + 1$ ii. $x^3 - x^2 + x + 4$ iii. $6x^3 - x^2 + x - 1$