1. Find which of the following equations are quadratic :

(i) $(3x - 1)^2 = 5(x + 8)$

(ii) $5x^2 - 8x = -3(7 - 2x)$

(iii) $(x - 4)(3x + 1) = (3x - 1)(x + 2)$

(iv) $x^2 + 5x - 5 = (x - 3)^2$

(v) $7x^3 - 2x^2 + 10 = (2x - 5)^2$

(vi) $(x - 1)^2 + (x + 2)^2 + 3(x + 1) = 0$

2. (i) Is $x = 5$ a solution of the equation $x^2 - 2x - 15 = 0$?

(ii) Is $x = -3$ a solution of the equation $2x^2 - 7x + 9 = 0$?

3. If $\sqrt{\frac{2}{3}}$ is a solution of equation $3x^2 + mx + 2 = 0$, find the value of m.

4. $\frac{2}{3}$ and 1 are the solutions of equation $mx^2 + nx + 6 = 0$. Find the values of m and n.

5. If 3 and -3 are the solutions of equation $ax^2 + bx - 9 = 0$; find the values a and b.