

1. Write the second degree polynomials given below as the product of two first degree polynomials:

(i) $x^2 - 20x + 91$

If $x^2 - 20x + 91 = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{20 \pm \sqrt{400 - 364}}{2}$$

$$\left. \begin{array}{l} a = 1 \\ b = -20 \\ c = 91 \end{array} \right\}$$

$$= \frac{20 \pm \sqrt{36}}{2} = \frac{20 \pm 6}{2} = \frac{26}{2}, \frac{14}{2} = 13, 7$$

$$\therefore x^2 - 20x + 91 = (x - 13)(x - 7)$$

(ii) $x^2 - 20x + 51$

If $x^2 - 20x + 51 = 0$

$$x = \frac{20 \pm \sqrt{400 - 204}}{2} = \frac{20 \pm \sqrt{196}}{2} = \frac{20 \pm 14}{2}$$

$$\left. \begin{array}{l} a = 1 \\ b = -20 \\ c = 51 \end{array} \right\}$$

$$= \frac{34}{2}, \frac{6}{2} = 17, 3$$

$$\therefore x^2 - 20x + 51 = (x - 17)(x - 3)$$