Assignment – 2
Poly Nominal

1. Find the zeros of the quadratic polynomial $2x^2 - 3x - 2$.

Solution:

$$2x^2 - 3x - 2 = 2x^2 + x - 4x - 2$$

$$= x(2x + 1) - 2(2x + 1)$$

$$= (2x + 1)(x - 2)$$

Hence value of $2x^2 - 3x - 2 = 0$

When $2x + 1 = 0$ or $x - 2 = 0$

i.e. $2x = -1$ or $x = 2$

$$x = \frac{-1}{2}$$

So the zeros are $\frac{-1}{2}$, 2

2. Find a quadrative polynomial. The sum of zeros $= \frac{1}{5}$ and product of zeros $= -1$.

Solution:

If α and β are the zeros of a quadrative polynomial.

Then the quadrative polynomial can be written as

$ax^2 + bx + c$

$$= k \left[x^2 - (\alpha + \beta)x + \alpha\beta \right]....,$$

here $\quad 5\left[x^2 - \left(\frac{1}{5}\right)x + (-1) \right]$

$\quad\quad = 5x^2 - x - 5 \quad$ is the required polynomial.

3. Find the value of m in the quadrative polynomial $2x^2 - 7x - m$ if me zero is $\frac{-3}{2}$.

Solution:

$$\alpha + \beta = \frac{-b}{a} = -\frac{-7}{2} = \frac{7}{2}$$

Let $\alpha = \frac{-3}{2}$

$$\therefore \quad \frac{-3}{2} + \beta = \frac{7}{2}$$

$$\beta = \frac{7}{2} + \frac{3}{2} = \frac{10}{2} = 5$$

$$\frac{-m}{2} = \frac{c}{a} = \alpha\beta$$

$$\frac{-m}{2} = \frac{-3}{2} \times 5$$

$$\therefore \quad -m = -15 \quad , \quad m = 15$$