

## Challenging Problems ( To be answered in comment box )

- Q.1 If  $\alpha$  and  $\beta$  are the zeros of the quadratic polynomial  $p(s) = 3s^2 - 6s + 4$ , find the value of  $\frac{\alpha}{\beta} + \frac{\beta}{\alpha} + 2\left(\frac{1}{\alpha} + \frac{1}{\beta}\right) + 3\alpha\beta$ .
- Q.2 If  $\alpha$  and  $\beta$  are the roots (zeros) of the polynomial  $f(x) = x^2 - 3x + k$  such that  $\alpha - \beta = 1$ , find the value of  $k$ .
- Q.3 If  $\alpha, \beta$  are the zeros of the polynomial  $f(x) = 2x^2 + 5x + k$  satisfying the relation  $\alpha^2 + \beta^2 + \alpha\beta = \frac{21}{4}$ , find value of  $k$  possible for this.

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Q.4 Find a quadratic polynomial each with the given numbers as the sum and product of its zeros respectively.

(i)  $\frac{1}{4}, -1$                       (ii)  $\sqrt{2}, \frac{1}{3}$

Q.5 If 2 and 3 are zeros of polynomial  $3x^2 - 2kx + 2m$ , find the values of k and m.

Q.6 If the sum of the squares of zeroes of the polynomial  $5x^2 + 3x + k$  is  $-\frac{11}{25}$ , find the value of k.

## Previous Years Board Questions – 1 Mark

- Q.1 Write the zeros of the polynomial  $x^2 + 2x + 1$ . [Delhi 2008]
- Q.2 Write the zeros of the polynomial,  $x^2 - x - 6$ . [Delhi 2008]
- Q.3 Write a quadratic polynomial, the sum and product of whose zeros are 3 and  $-2$  respectively. [Delhi-2008]
- Q.4 If  $(x + a)$  is a factor of  $2x^2 + 2ax + 5x + 10$ , find  $a$  [Foreign-2008]
- Q.5 For what value of  $k$ ,  $(-4)$  is a zero of the polynomial  $x^2 - x - (2k + 2)$ ? [Delhi-2009]

## Previous Years Board Questions – 1 Mark

- Q.6 For what value of  $p$ ,  $(-4)$  is a zero of the polynomial  $x^2 - 2x - (7p + 3)$ ?  
[Delhi-2009]
- Q.7 If 1 is a zero of the polynomial  $p(x) = ax^2 - 3(a - 1)x - 1$ , then find the value of  $a$ .  
[AI-2009]
- Q.8 Write the polynomial, the product and sum of whose zeros  $-9/2$  and  $-3/2$  respectively  
[Foreign-2009]
- Q.9 Write the polynomial, the product and sum of whose zeros are  $-13/5$  and  $-3/5$  respectively.  
[Foreign-2009]