EduSahara™ Assignment

Name : Zeros of a Polynomial

Chapter : Polynomials and Factorisation

Grade : SSC Grade IX

1. Find the value of k such that $4x^3 - 10x^2 - 78x + k$ is exactly divisible by $(2x+6)$

   (i) -38 (ii) -34 (iii) -35 (iv) -37 (v) -36

2. If 1 and -4 are the zeros of the polynomial $f(x) = x^4 + 6x^3 + bx^2 - 6x + a$, find the value of a and b

   (i) 6 , -9 (ii) 8 , -7 (iii) -8 , 8 (iv) -8 , 7 (v) -7 , 7

3. Find the value of a and b such that $16x^4 + ax^3 - 52x^2 + 350x + b$ is exactly divisible by $(4x^2+4x-15)$

   (i) -55 , -300 (ii) -56 , -300 (iii) -56 , -299 (iv) -299 , -55 (v) -301 , -57

4. If 1 is the zero of the polynomial $f(x) = 4x^2 - 8x + k$, find k

   (i) 4 (ii) 7 (iii) 3 (iv) 2 (v) 5

5. If the polynomial $f(x) = x^2 + kx - 6$ is exactly divisible by $(x+1)$, find k

   (i) -6 (ii) -5 (iii) -7 (iv) -4 (v) -2

6. If the polynomials $2x^2 + ax - 2$ and $ax^2 + 4x + 10$ leave the same remainder when divided by $(x-2)$, find the value of a

   (i) (-6) (ii) (-5) (iii) (-7) (iv) (-4) (v) (-8)

7. Which of the following are true?

   a) If (x - a) is a factor of f(x), then f(a) = 0
   b) Zero of a polynomial is the value of the variable for which the polynomial value is zero
   c) Zero of a polynomial and root of the polynomial are synonymous
   d) Zero of a polynomial and zero polynomial are synonymous
   e) If (x + a) is a factor of f(x), then f(a) = 0
   f) A polynomial of degree n has atmost n zeros
   g) A linear polynomial in one variable has only one root

   (i) {e,b} (ii) {a,b,c,f,g} (iii) {d,a} (iv) {d,f,g} (v) {d,e,c}

8. If (x^2-1) is a factor of $ax^4 + bx^3 + cx^2 + dx + e$, which of the following are true ?

   a) a + b + c = d + e
   b) a + b + c + d + e = 0
   c) b + d = 0
   d) d + e = 0
   e) a + b + c = 0
   f) a + c + e = 0

   (i) {d,c} (ii) {a,b} (iii) {b,c,f} (iv) {d,b,c} (v) {e,a,f}

9. Find the value of k such that $4x^4 - 24x^3 + 52x^2 - 48x + k$ is exactly divisible by $(2x-2)$

(i) 13 (ii) 19 (iii) 15 (iv) 17 (v) 16

10. If $\frac{3}{2}$ and -2 are the zeros of the polynomial $f(x) = ax^4 + bx^3 - 13x^2 - 59x + 30$, find the value of a and b

(i) 5 , 20 (ii) 21 , 5 (iii) 19 , 3 (iv) 4 , 20 (v) 4 , 21

11. Find the value of a and b such that $8x^4 + 20x^3 + bx^2 + ax$ is exactly divisible by $(4x^2+2x-2)$

(i) -7 , 4 (ii) -8 , 4 (iii) 3 , -9 (iv) -8 , 5 (v) 5 , -7

12. If -1 is the zero of the polynomial $f(x) = kx^2 + 8x + 6$, find k

(i) 2 (ii) -1 (iii) 3 (iv) 1 (v) 4

13. If the polynomial $f(x) = kx^2 + 6x - 3$ is exactly divisible by $(3x+3)$, find k

(i) 6 (ii) 12 (iii) 8 (iv) 10 (v) 9

14. If the polynomials $ax^2 - 5x - 25$ and $-2x^2 + ax + 32$ leave the same remainder when divided by $(x+3)$, find the value of a

(i) 1 (ii) 3 (iii) 5 (iv) 2 (v) (-1)

Assignment Key

1) (v)	2) (iv)	3) (ii)	4) (i)	5) (ii)	6) (i)
7) (ii)	8) (iii)	9) (v)	10) (iv)	11) (ii)	12) (i)
13) (v)	14) (iv)				