EduSahara™ Assignment

Name : Zeros of a Polynomial

Chapter : Polynomials and Factorisation

Grade : SSC Grade IX

1. Find the value of k such that $4x^4 - 42x^3 + 150x^2 + kx + 96$ is exactly divisible by $(2x-3)$

   (i) -208 (ii) -209 (iii) -211 (iv) -207 (v) -205

2. If 3 and -5 are the zeros of the polynomial $f(x) = 2x^4 + bx^3 - 35x^2 + 9x + a$, find the value of a and b

   (i) 46 , 3 (ii) 4 , 46 (iii) 45 , 4 (iv) 2 , 44 (v) 45 , 3

3. Find the value of a and b such that $bx^4 - 13x^2 + a$ is exactly divisible by (x^2-9)

   (i) 36 , 1 (ii) 2 , 37 (iii) 0 , 35 (iv) 36 , 2 (v) 37 , 1

4. If -2 is the zero of the polynomial $f(x) = kx^2 - 4x - 24$, find k

   (i) 3 (ii) 4 (iii) 7 (iv) 1 (v) 5

5. If the polynomial $f(x) = kx^2 + 7x + 10$ is exactly divisible by $(x+2)$, find k

   (i) 2 (ii) -1 (iii) 0 (iv) 1 (v) 3

6. If the polynomials $ax^2 + 6x + 30$ and $-x^2 + ax - 3$ leave the same remainder when divided by $(x+3)$, find the value of a

   (i) (-5) (ii) (-1) (iii) 0 (iv) (-3) (v) (-2)

7. Which of the following are true?

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

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

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

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

9. Find the value of k such that $8x^4 + 32x^3 + kx^2 - 48x$ is exactly divisible by $(2x+4)$

(i) 7 (ii) 9 (iii) 10 (iv) 6 (v) 8

10. If $\frac{5}{2}$ and -5 are the zeros of the polynomial $f(x) = 2x^4 - 5x^3 + ax^2 + bx - 150$, find the value of a and b

(i) -38 , 155 (ii) 156 , -37 (iii) 154 , -39 (iv) -37 , 155 (v) -38 , 156

11. Find the value of a and b such that $8x^4 + 24x^3 + ax^2 + bx + 48$ is exactly divisible by $(4x^2+4x-8)$

(i) -57 , -25 (ii) -55 , -23 (iii) -24 , -56 (iv) -23 , -56 (v) -24 , -55

12. If $\frac{1}{3}$ is the zero of the polynomial $f(x) = 6x^2 + kx + 3$, find k

(i) -8 (ii) -12 (iii) -10 (iv) -14 (v) -11

13. If the polynomial $f(x) = x^2 + kx - 18$ is exactly divisible by $(x+6)$, find k

(i) 2 (ii) 3 (iii) 4 (iv) 5 (v) 1

14. If the polynomials $-5x^2 + ax + 53$ and $ax^2 - 3x - 25$ leave the same remainder when divided by $(x+3)$, find the value of a

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

Assignment Key

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