



1. Find the value of k such that $kx^3 - 24x^2 - 25x + 150$ is exactly divisible by $(x-6)$

- (i) 4 (ii) 2 (iii) 6 (iv) 3 (v) 5

2. If 5 and $(\frac{-1}{2})$ are the zeros of the polynomial $f(x) = bx^4 - 52x^3 + 52x^2 + ax$, find the value of a and b

- (i) 7, 39 (ii) 41, 8 (iii) 40, 8 (iv) 9, 41 (v) 40, 9

3. Find the value of a and b such that $4x^4 + bx^3 + ax^2 + 80x$ is exactly divisible by $(x^2 + 2x - 8)$

- (i) -1, -51 (ii) -52, -2 (iii) -52, -1 (iv) -3, -53 (v) -51, -2

4. If 2 is the zero of the polynomial $f(x) = 3x^2 - 4x + k$, find k

- (i) -6 (ii) -4 (iii) -3 (iv) -5 (v) -1

5. If the polynomial $f(x) = 9x^2 + kx - 6$ is exactly divisible by $(3x-2)$, find k

- (i) 0 (ii) 6 (iii) 2 (iv) 4 (v) 3

6. If the polynomials $ax^2 + 3x - 12$ and $5x^2 + ax - 42$ leave the same remainder when divided by $(x-3)$, find the value of a

- (i) (-1) (ii) 2 (iii) 0 (iv) 1 (v) 4

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

- (i) {g,b} (ii) {a,b,c,d,f} (iii) {e,d,f} (iv) {e,a} (v) {e,g,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) $a + c + e = 0$
b) $d + e = 0$
c) $a + b + c = 0$
d) $a + b + c = d + e$
e) $b + d = 0$
f) $a + b + c + d + e = 0$

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

9. Find the value of k such that $2x^4 + kx^3 + 32x^2 + 84x - 144$ is exactly divisible by $(x-6)$

- (i) -21 (ii) -17 (iii) -19 (iv) -18 (v) -20

10. If 2 and $(\frac{-3}{2})$ are the zeros of the polynomial $f(x)=8x^4 - 28x^3 - 92x^2 + bx + a$, find the value of a and b

- (i) 240, 112 (ii) 241, 112 (iii) 111, 239 (iv) 113, 241 (v) 240, 113

11. Find the value of a and b such that $bx^4 - 34x^3 + ax^2 + 10x - 100$ is exactly divisible by $(2x^2 - 2x - 4)$

- (i) 72, 4 (ii) 5, 73 (iii) 72, 5 (iv) 73, 4 (v) 3, 71

12. If $\frac{2}{3}$ is the zero of the polynomial $f(x)=6x^2 - 22x + k$, find k

- (i) 9 (ii) 12 (iii) 13 (iv) 15 (v) 11

13. If the polynomial $f(x)=4x^2 + 6x + k$ is exactly divisible by $(2x+2)$, find k

- (i) 0 (ii) 2 (iii) 1 (iv) 3 (v) 4

14. If the polynomials $6x^2 + ax - 71$ and $ax^2 - x + 16$ leave the same remainder when divided by $(x+3)$, find the value of a

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

Assignment Key

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