



1. The remainder when $3x$ is divided by (-7) is
(i) 2 (ii) (-1) (iii) 0 (iv) (-2) (v) 1
2. The remainder when $2p^2$ is divided by $(p+5)$ is
(i) 51 (ii) 50 (iii) 49 (iv) 52 (v) 48
3. The remainder when $(7x+7)$ is divided by $(x+5)$ is
(i) (-28) (ii) (-30) (iii) (-29) (iv) (-25) (v) (-27)
4. The remainder when $(-6i^2+i)$ is divided by $(i-5)$ is
(i) (-146) (ii) (-148) (iii) (-144) (iv) (-143) (v) (-145)
5. The remainder when $(-3t^2+8t-5)$ is divided by $(t+3)$ is
(i) (-57) (ii) (-53) (iii) (-56) (iv) (-58) (v) (-55)
6. The remainder when $(-5q^4-3q^3-9q^2+9q+3)$ is divided by (q^2-5q+4) is
(i) $(-525q+519)$ (ii) $(-524q+519)$ (iii) $(-526q+519)$ (iv) $(-522q+519)$ (v) $(-523q+519)$
7. Factorize $(6x^2+17x+12)$
(i) $(2x+3)(3x+4)$ (ii) $(2x+3)(6x+4)$ (iii) $(2x+3)4$ (iv) $(2x+3)(2x+4)$ (v) $(2x+3)(4x+4)$
8. Factorize $(4x^3-34x^2-38x+180)$
(i) $(x-9)(3x+5)(3x-4)$ (ii) $(x-9)(4x+5)(5x-4)$ (iii) $(x-9)(2x+5)(2x-4)$ (iv) $(x-9)(x+5)(x-4)$
(v) $(x-9)(-x+5)(-x-4)$
9. Factorize $(x^4-2x^3-103x^2+188x+2016)$
(i) $(x+4)(x+9)(x-8)(x-7)$ (ii) $(x+4)(4x+9)(3x-8)(3x-7)$ (iii) $(x+4)9(-8)(-7)$
(iv) $(x+4)(-x+9)(-2x-8)(-x-7)$ (v) $(x+4)(2x+9)(2x-8)(2x-7)$
10. The value of the polynomial $(2x+9)$ at $x=0$ is
(i) 8 (ii) 7 (iii) 10 (iv) 12 (v) 9
11. The value of the polynomial $(-8i^2+5i-2)$ at $i=(-1)$ is
(i) -16 (ii) -14 (iii) -17 (iv) -13 (v) -15
12. The value of the polynomial $(-3c^3-3c^2+3c)$ at $c=(-5)$ is
(i) 288 (ii) 284 (iii) 283 (iv) 285 (v) 286

13. The value of the polynomial $(3t^4 + 9t^3 + 2t^2 - 5t + 3)$ at $t=0$ is

- (i) 0 (ii) 3 (iii) 2 (iv) 5 (v) 4

14. Factorize $(x^2 + 2xa - 5x + a^2 - 5a - 6)$

- (i) $(x+a-6)(x-a+1)$ (ii) $(x-a+1)(x+a+6)$ (iii) $(x-a-6)(x+a-1)$ (iv) $(x+a+1)(x-a-6)$
(v) $(x+a+1)(x+a-6)$

15. Factorize $(x^3 + 3x^2a + 3xa^2 - x + a^3 - a)$

- (i) $(x+a)(x-a-1)(x+a+1)$ (ii) $(x+a)(x+a-1)(x+a+1)$ (iii) $(x-a)(x-a-1)(x+a+1)$
(iv) $(x+a)(x+a-1)(x-a+1)$ (v) $(x-a)(x+a-1)(x-a+1)$

16. Factorize $(35x^2 - 43xy - 36y^2)$

- (i) $(7x+4y)(5x+9y)$ (ii) $(7x+4y)(7x-4y)$ (iii) $(7x-4y)(5x-9y)$ (iv) $(7x-4y)(5x+9y)$
(v) $(7x+4y)(5x-9y)$

17. Find the value of k such that $kx^4 + 24x^3 + 32x^2$ is exactly divisible by $(2x+4)$

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

18. If 1 and $(\frac{-3}{2})$ are the zeros of the polynomial $f(x) = 8x^4 - 20x^3 - 14x^2 + bx + a$, find the value of a and b

- (i) 42, -14 (ii) -14, 41 (iii) -15, 42 (iv) -15, 41 (v) 40, -16

19. Find the value of a and b such that $8x^4 - 40x^3 - 42x^2 + bx + a$ is exactly divisible by $(4x^2 + 8x - 5)$

- (i) 231, -99 (ii) -100, 230 (iii) -100, 231 (iv) 229, -101 (v) -99, 230

20. If -3 is the zero of the polynomial $f(x) = kx^2 + 11x + 15$, find k

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

21. If the polynomial $f(x) = kx^2 - 7x + 2$ is exactly divisible by $(2x-1)$, find k

- (i) 4 (ii) 5 (iii) 6 (iv) 7 (v) 9

22. If the polynomial $4x^4 + 12x^3 - 31x^2 + ax + b$ is divided by $(x-1)$, it leaves a remainder -168.

If it is divided by $(x-5)$, it leaves a remainder 2640. Find the value of a and b

- (i) -108, -44 (ii) -46, -109 (iii) -107, -45 (iv) -108, -45 (v) -44, -107

23. If the polynomials $4x^2 + ax - 29$ and $ax^2 + 2x + 21$ leave the same remainder when divided by $(x+2)$, find the value of a

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

24. Which of the following are true?

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

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

25. Which of the following are true?

- a) Degree of zero polynomial is zero
- b) A binomial may have degree 3
- c) A binomial has two and only two terms
- d) πr^2 is a monomial
- e) Every polynomial is a binomial

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

26. Given $f(t) = (-4t - 3)$, find $f(4)$

(i) -22 (ii) -18 (iii) -19 (iv) -20 (v) -17

27. Given $f(x) = (3x^2 + 7x - 1)$, find $f(3)$

(i) 48 (ii) 50 (iii) 46 (iv) 47 (v) 45

28. Given $f(k) = (-9k^3 + 6k + 9)$, find $f(-5)$

(i) 1101 (ii) 1104 (iii) 1105 (iv) 1103 (v) 1106

29. Given $f(v) = (9v^4 - 8v^3 + 2v^2 - 6v - 6)$, find $f(2)$

(i) 71 (ii) 72 (iii) 69 (iv) 68 (v) 70

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

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

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

31. Which of the following are true ?

- a) If the degree of $p(x)$ is less than the degree of $d(x)$, we should not divide $p(x)$ with $d(x)$
- b) If $p(x)$ is divided by $(x - a)$, the remainder is $p(a)$
- c) Division of a polynomial with another polynomial stops when the degree of the remainder equals the degree of the divisor
- d) If $p(a) = 0$, then $(x + a)$ perfectly divides $p(x)$

(i) $\{c,d,a\}$ (ii) $\{d,b\}$ (iii) $\{a,b\}$ (iv) $\{c,a\}$ (v) $\{c,b,a\}$

- Which of the following are possible values for the length and breadth of a rectangle whose area is
32. $(24x^2 + 8x - 10)$
- (i) $(-6x-1)(4x+2)$ (ii) $(6x-5)(4x+2)$ (iii) $(6x+5)(4x+2)$ (iv) $(6x-5)(4x-2)$ (v) $(6x+5)(4x-2)$
-
33. In which of the cases, $g(x)$ is a factor of $f(x)$?
- (i) $f(x) = (-3x^3 - 20x^2 + 47x + 120), g(x) = (-x + 2)$ (ii) $f(x) = (3x^3 - 11x^2 - 2x + 24), g(x) = (3x + 4)$
- (iii) $f(x) = (-3x^3 - 23x^2 + 18x + 80), g(x) = (x + 3)$ (iv) $f(x) = (3x^3 + 38x^2 + 127x + 120), g(x) = (-x + 3)$
- (v) $f(x) = (-3x^3 - 22x^2 + 24x + 64), g(x) = (3x + 5)$
-
34. Which of the following polynomials is a multiple of $(x-5)$?
- (i) $(6x^3 - 7x^2 - 7x + 6)$ (ii) $(3x^3 + 4x^2 - 28x + 16)$ (iii) $(6x^3 - 25x^2 + 32x - 12)$ (iv) $(x^3 + 3x^2 - 6x - 8)$
- (v) $(2x^3 - 11x^2 + 2x + 15)$
-
35. Which of the following polynomials has $(2x+1)$ as a factor?
- (i) $(6x^3 - 13x^2 - 10x + 24)$ (ii) $(18x^3 + 15x^2 - 39x - 36)$ (iii) $(6x^3 + 15x^2 + 12x + 3)$ (iv) $(3x^3 - 9x - 6)$
- (v) $(2x^3 - 5x^2 - x + 6)$
-
36. Find the remainder when $(x^2 - 3x - 28)$ is divided by $(x - 6)$
- (i) -12 (ii) -9 (iii) -10 (iv) -7 (v) -11
-
37. If $f(x) = (6x^3 - 26x^2 + 4x + 16)$ and $g(x) = (9x^3 - 24x^2 - 53x + 20)$ have a common factor, find the common factor
- (i) $(3x + 2)$ (ii) $(x - 4)$ (iii) $(3x + 5)$ (iv) $(2x - 2)$ (v) $(3x - 1)$
-
38. Find the quadratic polynomial which when divided by $(x + 7), (3x + 2), (2x - 4)$ leaves remainders of 272, 6, 110 respectively.
- (i) $(3x^2 + 26x + 35)$ (ii) $(6x^2 - 4x - 16)$ (iii) $(3x^2 + 23x + 14)$ (iv) $(6x^2 - 8x - 8)$ (v) $(9x^2 + 27x + 20)$
-
39. Which of the following polynomials is not a multiple of $(2x + 1)$?
- (i) $(6x^2 + 13x + 5)$ (ii) $(4x^2 - 1)$ (iii) $(2x^2 + 3x - 2)$ (iv) $(2x^2 + 5x + 2)$ (v) $(4x^2 - 4x - 3)$
-
40. If the polynomial $bx^2 + ax + 12$ is divided by $(3x - 3)$, it leaves a remainder 36. If it is divided by $(3x + 5)$, it leaves a remainder $(-1\frac{1}{3})$. Find the value of a and b
- (i) 5, 17 (ii) 7, 19 (iii) 18, 6 (iv) 18, 7 (v) 19, 6

Assignment Key

1) (iii)	2) (ii)	3) (i)	4) (v)	5) (iii)	6) (ii)
7) (i)	8) (iii)	9) (i)	10) (v)	11) (v)	12) (iv)
13) (ii)	14) (v)	15) (ii)	16) (v)	17) (v)	18) (iv)
19) (ii)	20) (i)	21) (iii)	22) (iv)	23) (iii)	24) (ii)
25) (ii)	26) (iii)	27) (iv)	28) (ii)	29) (v)	30) (ii)
31) (iii)	32) (v)	33) (ii)	34) (v)	35) (iii)	36) (iii)
37) (ii)	38) (v)	39) (iii)	40) (iii)		