MATHS

BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

Division Algorithm of Polynomials

Example

1. Divide $7x^4 - 2x^2 + 62x + 2$ by $4x - 8 - 2x^2$ and establish the relation that

Dividend= Divisor×Quotient+ Remainder.

2. If a polynomial

$6x^4 + 8x^3 + 17x^2 + 21x + 7$ is divided by

another polynomial $3x^2 + 4x + 1$ the

remainder comes out to be $ax + b$,find a and

b.

3. $\dfrac{2}{3}$ is a zero of the polynomial $6x^3 - 31x^2 + 30x - 8$. Find the other zeros.

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4. If $2 \pm \sqrt{3}$ are zeroes of the polynomial $2x^4 - 5x^3 - 12x^2 + 11x - 2$,then find the other zeros.

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Exercise

1. Divide:

$x^4 + 5x^3 + 13x^2 + 21x + 12$ by $x^2 + 3x + 2$

and establish the relation that Dividend=

Divisor × Quotient + Remainder

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2. Divide:

$x^5 - 4x^3 + x^2 + 3x + 1$ by $x^3 - 3x + 1$ and

establish the relation that Dividend= Divisor ×

Quotient + Remainder

3. Divide:

$$6x^4 + 8x^3 + 17x^2 + 21x + 7 \qquad \text{by}$$

$3x^2 + 4x + 1$ and establish the relation that

Dividend= Divisor × Quotient + Remainder

4. -2 is a zero of the polynomial

$x^3 + 2x^2 - x - 2$,find the other zeroes.

5. $\dfrac{3}{4}$ is a zero of the polynomial $4x^3 - 23x^2 + 3x + 9$, find the other zeroes.

6. $\dfrac{4}{5}$ is a zero of the polynomial $10x^3 - 23x^2 + 2x + 8$, find the other zeroes.

7. If the polynomial $6x^4 + 8x^3 + 17x^2 + 21x + 7$ is divided by another polynomial $3x^2 + 4x + 1$, the remainder cames out to be (ax+b),find out a and b.

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8. Find the value of a and b so that $x^4 + x^3 + 8x^2 + ax + b$ is divisible by $x^2 + 1$.

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9. Find the value of a and b so that $6x^4 + 8x^3 - 5x2 + ax + b$ is divisible by $2x^2 - 5$.

10. If $-\sqrt{2}$ and $\sqrt{2}$ are the two zeroes of the polynomial $2x^4 - 3x^3 - 3x^2 + 6x - 2$ find the other two zeroes.

11. If two zeroes of the polynomial

$$x^4 - 6x^3 - 26x^2 + 138x - 35 \quad \text{are} \quad 2 \pm \sqrt{3}$$

.find other zeroes.

12. If $3 - \sqrt{2}$ is a zero of polynomial.

$x^3 + bx^2 + 13x + c$,then find the b and c

where b and c are rational numbers.

13. If $4 + \sqrt{5}$ is a zero of polynomial. $x^3 + bx^2 - 5x + c$ then find the b and c where b and c are rational numbers.

14. If a polynomial f(x) is divided by $x - a$,whose quotient is g(x) and remainder r(x).express f(x) in term of others.

15. If α, β, are the zeroes of the polynomial $ax^2 + bx + c$,then $\alpha^2 + \beta^2 =$

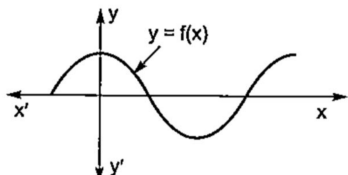▶ **Watch Video Solution**

16. If $2 + \sqrt{3}$ is a zero of a quadratic polynomial.write the other zero of it.

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17. Write the number of zeros of the polynomial f(x) whose graph is

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18.   If

$$p^4 + q^4 = \left(p^2 + xpq + q^2\right), \left(p^2 - xpq + q^2\right)$$

.Find the value of x.

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19. Fill in the blank:

The degree of a zero polynomial zero is _____.

20. Fill in the blank:

The _____ of a polynomial are the x-coordinates of the point of intersection i.e. where y coordinate is _____.

21. Fill in the blank:

The product of zeros of the polynomial

$3x^2 - 7x + 6$ is

22. Fill in the blank:

The sum of zeroes in the polynomial

$ax^2 - bx + c$ is _____.

23. Fill in the blank:

Degree of remainder of the division of a polynomial is less than a degree of _____.

24. The graph of a linear polynomial cross the x-axis

A. Once

B. Twice

C. Three

D. None

Answer:

25. If α and β are the zeros of the polynomial $3x^2 + 8x + 5$ then find the sum of zeros

A. $\dfrac{8}{5}$

B. $-\dfrac{8}{5}$

C. $\dfrac{8}{7}$

D. $\dfrac{7}{8}$

Answer:

26. If α and β are the zeros of the polynomial $x^2 + bx + c$ the polynomial having $\dfrac{1}{\alpha}, \dfrac{1}{\beta}$ as its zero is

A. $x^2 + cx + b$

B. $x^2 - cx + b$

C. $cx^2 + bx + 1$

D. None

Answer:

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27. If zeros of the polynomial $x^2 - bx + c$ be reciprocal to each other then b equals to

A. b

B. 1

C. -1

D. 1/b

Answer:

28. If the zeros of polynomial $x^2 + bx - c$ are

equal and opposite then b equals to

A. b

B. $-b$

C. 1

D. 0

Answer: