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.

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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.

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3. $\frac{2}{3}$ 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

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3. Divide:

$6x^4 + 8x^3 + 17x^2 + 21x + 7$ by $3x^2 + 4x + 1$ and establish the relation that Dividend= Divisor × Quotient + Remainder

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4. -2 is a zero of the polynomial $x^3 + 2x^2 - x - 2$,find the other zeroes.

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

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

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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 $2x^2 - 5$.

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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.

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11. If two zeroes of the polynomial $x^4 - 6x^3 - 26x^2 + 138x - 35$ are $2 \pm \sqrt{3}$ .find other zeroes.

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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.

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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.

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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.

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

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

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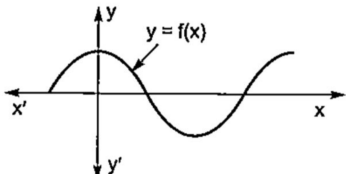
17. Write the number of zeros of the polynomial f(x) whose graph is



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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

_____.

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20. Fill in the blank:

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

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21. Fill in the blank:

The product of zeros of the polynomial $3x^2 - 7x + 6$ is

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22. Fill in the blank:

The sum of zeroes in the polynomial $ax^2 - bx + c$ is _____.

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23. Fill in the blank:

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

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

A. Once

B. Twice

C. Three

D. None

Answer:

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

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

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

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

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

Answer:

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26. If α and β are the zeros of the polynomial $x^2 + bx + c$ the polynomial having $\frac{1}{\alpha}, \frac{1}{\beta}$ 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:

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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:

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