MATHS

BOOKS - VGS BRILLIANT MATHS (TELUGU ENGLISH)

POLYNOMIALS

Examples

1. Look at the graph in the figures given below. Each is the graph of y = p(x), where p(x) is a

polynomial. In each of the graphs, find the number of zeroes of p(x) in the given range of x.

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2. Find the number of zeroes of the given polyminals. And also find their values.

(i) $p(x) = 2x + 1$

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3. Find the number of zeroes of the given polyminals. And also find their values.

(ii) $q(y) = y^2 - 1$

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4. Find the number of zeroes of the given polyminals. And also find their values.

(iii) $r(z) = z^3$

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5. Find the zeroes of the quadratic polynomial $x^2 + 7x + 10$, and verify the relationship between the zeroes and the coefficients.

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6. Find the zeroes of the polynomial $x^2 - 3$ and verify the relationship between the zeroes and the coefficients.

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7. Find a quadratic polynomial, the sum and product of whose zeroes are -3 and 2 respectively.

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8. Find a quadratic polynomial if the zeroes of it are 2 and $\frac{-1}{3}$ respectively.

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9. Verify that $3, \, -1, \, -\frac{1}{3}$ are the zeroes of the cubic polynomial $p(x) = 3x^2 - 5x^2 - 11x - 3$, and then verify the relationship between the zeroes and the coefficients.

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10. Divide $2x^2 + 3x + 1 by x + 2$.

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11. Divide $3x^3 + x^2 + 2x + 5$ by $1 + 2x + x^2$.

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12. Divide $3x^2 + x^3 - 3x + 5$ by $x - 1 - x^2$, and verify the division algorithm.

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13. Find all the zeroes of $2x^4 - 3x^3 - 3x^2 + 6x - 2$, if you know that two of its zeroes are $\sqrt{2}$ and $-\sqrt{2}$.

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Do These

1. State which of the following are polynomial and which are not ? Give resons.

(i) $2x^3$

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2. State which of the following are polynomial and which are not ? Give resons.

(ii) $\frac{1}{x-1}$

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3. State which of the following are polynomial and which are not ? Give resons.

(iii) $4z^2+\frac{1}{7}$

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4. State which of the following are polynomial and which are not ? Give resons.

(iv) $m^2 - \sqrt{2}m + 2$

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5. State which of the following are polynomial and which are not ? Give resons.

(v) $p^{-2} + 1$

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6. $p(x) = x^2 - 5x - 6$, find the value of $p(1)$

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7. $p(x) = x^2 - 5x - 6$, find the value of $p(2)$

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8. $p(x) = x^2 - 5x - 6$, find the value of $p(3)$.

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9. $p(x) = x^2 - 5x - 6$, find the value of $p(0)$.

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10. $p(x) = x^2 - 5x - 6$, find the value of $p(-1)$.

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11. $p(x) = x^2 - 5x - 6$, find the value of $p(-2)$.

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12. $p(x)=x^2-5x-6$, find the value of $p(-3)$.

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13. $p(m)=m^2-3m+1$, find the value of p(1).

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14. $p(m) = m^2 - 3m + 1,$ find the value of p(-1).

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15. Let $p(x) = x^2 - 4x + 3$. Find the value of p(0) and obtain zeroes of the polynomial p(x).

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16. Let $p(x) = x^2 - 4x + 3$. Find the value of p(1) and obtain zeroes of the polynomial p(x).

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17. Let $p(x) = x^2 - 4x + 3$. Find the value of p(2) and obtain zeroes of the polynomial p(x).

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18. Let $p(x) = x^2 - 4x + 3$. Find the value of p(3) and obtain zeroes of the polynomial p(x).

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19. Check wheather -3 and 3 are the zeroes of the polynomial $x^2 - 9$.

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20. Find the zeroes of the quadratic polynomials given below. Find the sum and product of the zeroes and verify relationship to the coefficients of terms in the polynomials.

(i) $p(x) = x^2 - x - 6.$

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21. Find the zeroes of the quadratic polynomials given below. Find the sum and product of the zeroes and verify relationship to the coefficients of terms in the polynomials.

(ii) $p(x) = x^2 - 4x + 3.$

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22. Find the zeroes of the quadratic polynomials given below. Find the sum and product of the zeroes and verify relationship to the coefficients of terms in the polynomials.

(iii) $p(x) = x^2 - 4$

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23. Find the zeroes of the quadratic polynomials given below. Find the sum and product of the zeroes and verify relationship to the coefficients of terms in the polynomials.

(iv) $p(x) = x^2 + 2x + 1.$

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24. If α, β, γ are the zeroes of the given cubic polynomials, find the values as given in the table.

S.No.	Cubic polynomial	$\alpha+\beta+\gamma$	$\alpha\beta+\beta\gamma+\gamma\alpha$	$\alpha\beta\gamma$
1.	x^3+3x^2-x-2			
2.	$4x^3+8x^2-6x-2$			
3.	x^3+4x^2-5x-2			
4.	x^3+5x^2+4			

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Do This

1. Draw the graph of (i) y=2x+5 and find the point of intersection on X - axis. Is the x-coordinates of these points also the zero of the polynomial?

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2. Draw the graph of (ii) $y = 2x - 5$ and find the point of intersection on X - axis. Is the x-coordinates of these points also the zero of the polynomial?

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3. Draw the graph of (iii) $y = 2x$ and find the point of intersection on X - axis. Is the x-coordinates of these points also the zero of the polynomial?

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Try These

1. Write 3 different quadratic, cubic and 2 linear polynomials with different number of terms.

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2. Write a quadratic polynomial and a cubic polynomial in variable x in the general form.

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3. Write a general polynomial q(z) of degree n with coefficients that are $b_0 \ldots . b_n$. What are the conditions on $b\_(0) \ldots \ldots . b_n$?

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4. Draw the graph of (i) $y = x^2 - x - 6$ and find zeros in each case. What do you notice?

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5. Draw the graph of (ii) $y = 6 - x - x^2$ and find zeros in each case. What do you notice?

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6. Write three quadratic polynomials that have 2 zeroes each.

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7. Write one qudratic polynomial that has one zero.

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8. Write one qudratic polynomial that has one zero.

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9. Write three qudratic polynomial that have no zeroes for x that are real numbers.

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10. Find the zeroes of cubic polynomials

(i) $-x^3$ without drawing the graph of the polynomial.

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11. Find the zeroes of cubic polynomials

(ii) $x^2 - x^3$ without drawing the graph of the polynomial.

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12. Find the zeroes of cubic polynomials

(iii) $x^3 - 5x^2 + 6x$ without drawing the graph of the polynomial.

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Try This

1. Find a quadratic polynomial with zeroes -2 and $\frac{1}{3}$.

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2. What is the quadratic polynomial whose sum of zeroes is $\frac{-3}{2}$ and the product of zeroes is -1.

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Exercise 3.1

1. If p(x) = $5x^7 - 6x^5 + 7x - 6$, find

(i) coefficient of x^5

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2. If p(x) = $5x^7 - 6x^5 + 7x - 6$, find

(ii) degree of p(x)

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3. If p(x) = $5x^7 - 6x^5 + 7x - 6$, find

(iii) constant term.

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4. Write three more polynomials and create three questions for each of them.

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5. State which of the following statements and true and which are false? Give reasons for your choice.

(i) The degree of the polynomial $\sqrt{2}x^2 - 3x + 1 is \sqrt{2}.$

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6. State which of the following statements and true and which are false? Give reasons for your choice.

(ii) The coefficient of x^2 in the polynomial $p(x) = 3x^3 - 4x^2 + 5x + 7$ is 2.

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7. State which of the following statements and true and which are false? Give reasons for your choice.

(iii) The degree of a constant term is zero.

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8. State which of the following statements and true and which are false? Give reasons for your choice.

(iv) $\frac{1}{x^2 - 5x + 6}$ is a quadratic polynomial.

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9. State which of the following statements and true and which are false? Give reasons for your choice.

(v) The degree of a polynomial is one more than the number of term in it.

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10. If $p(t)=t^3-1$, find the value of p(1).

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11. If $p(t) = t^3 - 1$, find the value of p(-1).

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12. If $p(t) = t^3 - 1$, find the value of p(0).

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13. If $p(t) = t^3 - 1$, find the value of p(2).

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14. If $p(t) = t^3 - 1$, find the value of p(-2).

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15. Check whether -2 and 2 are the zeroes of the polynomial $x^4 - 16$.

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16. Check whether 3 and -2 are the zeroes of the polynomial p(x) when $p(x) = x^2 - x - 6$.

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Exercise 3.2

1. The graphs of y = p(x) are given in the figure below, for some polynomials p(x). In each case, find the number of zeroes of p(x).

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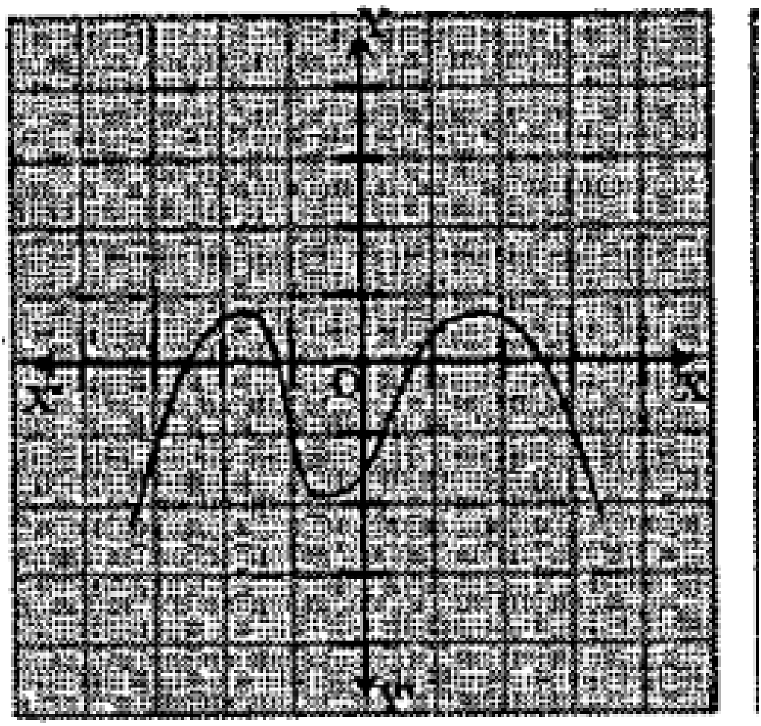
2. The graphs of y = p(x) are given in the figure below, for some polynomials p(x). In each case, find the number of zeroes of p(x).



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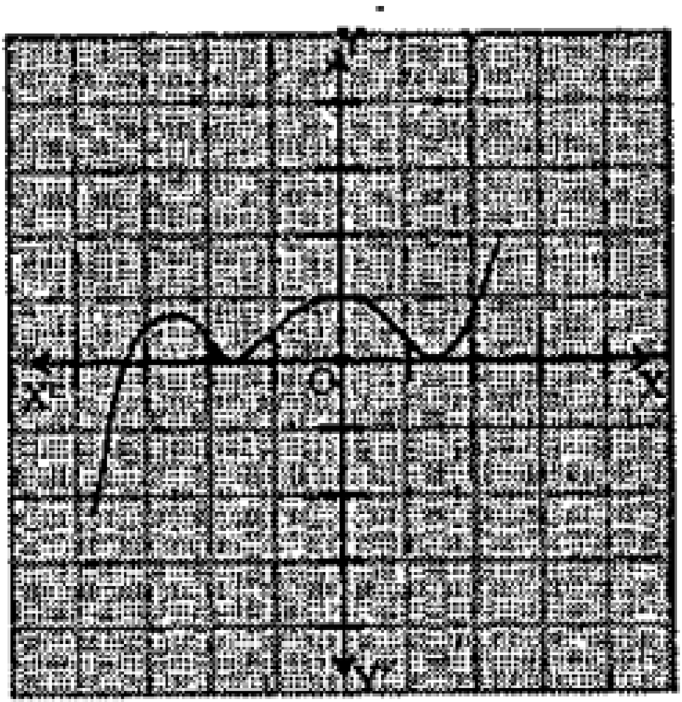
3. The graphso f y = p(x) are given in the figure below, for some polynomials p(x). In each case, find the number of zeroes of p(x).



(vi)

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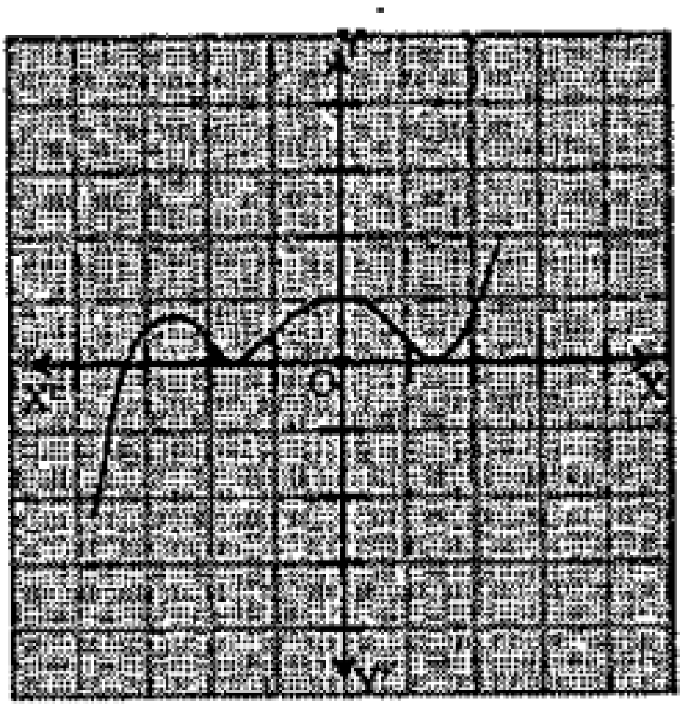
4. The graphso f y = p(x) are given in the figure below, for some polynomials p(x). In each case, find the number of zeroes of p(x).



(vi)

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5. Find the zeroes of the given polynomials.

(i) $p(x) = 3x$

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6. Find the zeroes of the given polynomials.

(ii) $p(x) = x^2 + 5x + 6.$

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7. Find the zeroes of the given polynomials.

(iii) $p(x) = (x+2)(x+3)$.

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8. Find the zeroes of the given polynomials.

(iv) $p(x) = x^4 - 16$.

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9. Draw the graphs of the given polynomial and find the zeroes. Justify the answer.

(i) $p(x) = x^2 - x - 12$

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10. Draw the graphs of the given polynomial and find the zeroes. Justify the answer.

(ii) $p(x) = x^2 - 6x + 9.$

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11. Draw the graphs of the given polynomial and find the zeroes. Justify the answer.

(iii) $p(x) = x^2 - 4x + 5.$

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12. Draw the graphs of the given polynomial and find the zeroes. Justify the answer.

(iv) $p(x) = x^2 + 3x - 4$

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13. Draw the graphs of the given polynomial and find the zeroes. Justify the answer.

(v) $p(x) = x^2 - 1.$

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14. Why are $\frac{1}{4}$ and -1 zeroes of the polynomial $p(x) = 4x^2 + 3x - 1$?

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Exercise 3.3

1. Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients.

(i) $x^2 - 2x - 8$.

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2. Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients.

(ii) $6x^2 - 3 - 7x$.

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3. Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients.

(iii) $4s^2 - 4s + 1$.

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4. Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients.

(iv) $4u^2 + 8u$

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5. Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients.

(v) $t^2 - 15$

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6. Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients.

(vi) $3x^2 - x - 4.$

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7. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

(i) $\frac{1}{4}, \ -1$

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8. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

(ii) $\sqrt{2}, \frac{1}{3}$.

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9. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

(iii) $0, \sqrt{5}$.

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10. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

(iv) 1,1

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11. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

(v) $-\frac{1}{4}, \frac{1}{4}$

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12. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

4,1

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13. Find the quadratic polynomial, for the zeroes α, β given in each case.

(i) 2,-1

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14. Find the quadratic polynomial, for the zeroes α, β given in each case.

(ii) $\sqrt{3}, \ -\sqrt{3}$

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15. Find the quadratic polynomial, for the zeroes α, β given in each case.

$\frac{1}{4}, -1$

Watch Video Solution

16. Find the quadratic polynomial, for the zeroes α, β given in each case.

(iv) $\frac{1}{2}, \frac{3}{2}$

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17. Verify that 1, -1 and -3 are the zeroes of the cubic polynimial $x^3 + 3x^2 - x - 3$ and check the relationship between zeroes and the coefficients.

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Exercise 3.4

1. Divide the polynomial p(x) by the polynomial g(x) and find the quotient and reminder in each of the following.

(i) $p(x) = x^3 - 3x^2 + 5x - 3, g(x) = x^2 - 2$

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2. Divide the polynomial p(x) by the polynomial g(x) and find the quotient and reminder in each of the following.

(ii)

$p(x) = x^4 - 3x^2 + 4x + 5, g(x) = x^2 + 1 - x$

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3. Divide the polynomial p(x) by the polynomial g(x) and find the quotient and reminder in each of the following.

(iii) $p(x) = x^4 - 5x + 6, g(x) = 2 - x^2.$

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4. Check in which case the first polynomial is a factor of the second polynomial by dividing the second polynomial by the first polynomial :

(i) $t^2 - 3, 2t^4 + 3t^3 - 2t^2 - 9t - 12.$

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5. Check in which case the first polynomial is a factor of the second polynomial by dividing the second polynomial by the first polynomial :

(ii) $x^2 + 3x + 1, 3x^4 + 5x^3 - 7x^2 + 2x + 2.$

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6. Check in which case the first polynomial is a factor of the second polynomial by dividing the second polynomial by the first polynomial :

(iii) $x^3 - 3x + 1, x^5 - 4x^3 + x^2 + 3x + 1.$

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7. Obtain all other zeroes of $3x^4 + 6x^3 - 2x^2 - 10x - 5$, if two of its zeroes are $\sqrt{\frac{5}{3}}$ and $-\sqrt{\frac{5}{3}}$.

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8. On dividing $x^3 - 3x^2 + x + 2$ by a polynomial g(x), the quotient and remainder were x-2 and -2x+4, respectively. Find g(x).

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9. Give example of polynomials p(x), g(x), q(x) and r(x), which satisfy the division algorithm and

(i) deg p(x) = deg q(x).

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10. Give example of polynomials p(x), g(x), q(x) and r(x), which satisfy the division algorithm and

(ii) deg q(x) = deg r(x).

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11. Give example of polynomials p(x), g(x), q(x) and r(x), which satisfy the division algorithm and

(iii) deg r(x) = 0.

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Optional exercise

1. Verify that the numbers given along side the cubic polynomials below are their zeroes. Also verify the relationship between the zeroes and the coefficients in each case.

(i) $2x^3 + x^2 - 5x + 2, \left(\frac{1}{2}, 1, -2\right)$

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2. Verify that the numbers given along side the cubic polynomials below are their zeroes. Also verify the relationship between the zeroes and the coefficients in each case.

(ii) $x^3 + 4x^2 + 5x - 2, (1, 1, 1)$

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3. Find a cubic polynomial with the sum, sum of the product of its zeroes taken two at a time, and the product of its zeroes as 2, -7, -14 respectively.

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4. If the zeroes of the polynomial $x^3 - 3x^2 + x + 1$ are a-b, a,a+b, find a and b.

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

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6. If the polynomial $x^4 - 6x^3 - 16x^2 + 25x + 10$ is divided by another polynomial $x^2 - 2x + k$, the remainder comes out to be x+a , find k and a.

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Part -A : Observation Material to solve various questions given in the public examination (1 Mark Questions)

1. If $p(x) = x^2 - 5x - 6$, find the value of p(3).

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2. Write two more polynomials and create two questions for each of them.

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3. Find the quotient $\dfrac{x^5 + x^4 + x^3 + x^2}{x^3 + x^2 + x + 1}$ When $x \neq 1$.

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4. We can write a trinomial having degree 7^{th}. Justify the given statement by giving one example.

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5. For what value of k, -4 is a zero of the polynomial $x^2 - x - (2k + 2)$.

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6. Write an example for a quadratic polynomial which has no zeroes.

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7. If $p(x) = x^3 - 3x^2 + 2x - 3$ is a polynomial, then find the value of p(1).

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8. Srikar says that the order of the polynomial $(x^2 - 5)(x^3 + 1)$ is 6. do you agree with him ? How?

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9. Find the zeroes of the polynomial $p(x) = x^2 - 4.$

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10. Verify the relation between zeroes and coefficients of the Quadratic polynomial $x^2 - 4$.

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Part -A : Observation Material to solve various questions given in the public examination (2 Mark Questions)

1. If we multiply or divide both sides of a linear equation by a non zero number, then the roots of linear equation will remain the same. Is it true? If so justify with an example.

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2. The length of a rectangle is 5 more than its breadth, so express its perimeter in the form of polynomial.

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3. Show that 2 and $-\frac{1}{3}$ are zeroes of the polynomial $3x^2 - 5x - 2$.

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4. Which of $\sqrt{2}$ and 2 is a zero of the polynomial $p(x) = x^3 - 2x$? Why?

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5. Divide x^3-3x^2+5x-3 by x^2-2 and verify the divison lemma.

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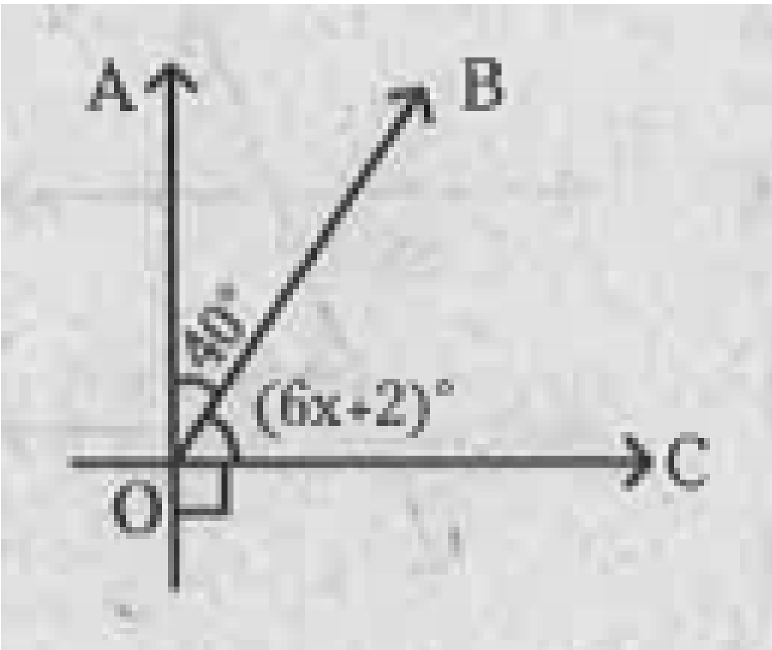
6. పటంలో x విలువ



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Part -A : Observation Material to solve various questions given in the public examination (4 Mark Questions)

1. Solve the qudratic polynomial $x^2 - 3x - 4$ by graphical method.

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2. Draw the graph of polynomial $4x^2 + 4x - 3$ by graph.

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3. Laxmi does not want to disclose the l, b,h of a cuboid of her project. She has constructed a polynomial $x^3 - 6x^2 + 11x - 6$ by taking the value of l, b, h as its zeroes. Can you open the secret?

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4. Draw a graph for the polynomial $p(x)=x^2+3x-4$ and find its zeros from the graph.

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5. Draw the graph of the polynomial $p(x)=3x^2+2x-1$ on the graph paper. Find its zeroes from the graph.

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6. Draw the graph of polynomial $p(x) = x^2 - 3x + 2$ and find the zeros from the graph.

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7. Draw the graph of the polynomial $p(x) = x^2 - 5x + 4$ on the graph paper. Find its zeroes from the graph.

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8. On dividing $x^3 - 3x^2 - 7$ by $x^2 - 2x + 4$, if the remainder is in the form of $Ax + B$, find the values of A and B.

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9. Divide $3x^4 - 5x^3 + 4x^2 + 3x - 5$ by $x^2 - 3$ and verify the division algorithm.

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10. Draw the graph for the polynomial $p(x) = x^2 - 5x + 6$ and find the zeroes from the graph.

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11. Draw the graph of $p(x) - x^2 - 2x - 8$ and find the zeroes of the polynomial from it.

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12. Total number of pencils required are given by $4x^4 + 2x^3 - 2x^2 + 62x - 66$. If each box contains $x^2 + 2x - 3$ pencils, then find the number of boxes to be purchesed.

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13. Find the zeroes of the quadratic polynomial $p(x) = x^2 + x - 20$ using graph.

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Creative Questions for CCE Model Examination

1. Find the zeroes of $x^2 + 8x + 15$.

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2. How do you say that the maximum number of zeroes of $x^2 + 8x + 15$ is 2 ?

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3. Find the zeroes of $x^2 + 8x + 15$.

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4. Check whether '6' becomes a zero of $x^2 + 8x + 15$ or not? Give reasons.

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5. 8 times of a number is added to its square give a result -15. then find the number by using its quadratic equation.

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6. In how many points will the graph of $x^2 + 8x + 15$ intersect X - axis? Why?

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7. Express the polynomial $x^2 + 8x + 15$ in view of variable 'y'.

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8. State the relation between coefficient of polynomial and zeroes of it.

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9. Find $p(3)$ if $p(x) = x^2 - 5x + 6$ is given.

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Part - B : Observation bits to solve various bits given in the public examination.

1. Order of the polynomial $5x^2 - 6x^5 + 7x - 6$ is ....

A. 4

B. 5

C. 6

D. 7

Answer: B

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2. Sum of zeroes of the polynomial $2x^2 - 8x + 6$ is ....

A. 4

B. -4

C. 3

D. -3

Answer: A

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3. Product of zeroes of the cubic polynomial $3x^3 - 5x^2 - 11x - 3$ is ....

A. 1

B. -1

C. $\frac{5}{3}$

D. $\frac{-5}{3}$

Answer: A

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4. The value of $p(x) = 4x^2 + 3x + 1$ at x = -1 is ....

A. 4

B. 3

C. 2

D. 1

Answer: C

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5. The zero value of polynomial px + q is ....

A. $\frac{-q}{p}$

B. $\frac{p}{q}$

C. $\frac{-p}{q}$

D. q

Answer: A

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6. $4y^2 - 5y + 1$ is a ....

A. linear polynomial

B. cubic polynomial

C. constant polynomial

D. quadratic polynomial

Answer: D

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7. $4x + 6y = 18$ doesn't pass through origin.

It indicates a ....

A. Curved line

B. Straight line

C. Parabola

D. None

Answer: B

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8. If α, β are the zeroes of the polynomial $x^2 - x - 6$ then $\alpha^2 \beta^2$= ....

A. 36

B. 6

C. -6

D. -36

Answer: A

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9. When p(x) = x^(2) -8x +k` leaves a remainder 6 when it is divided by (x-1) then k = ...

A. 13

B. 8

C. -5

D. 5

Answer: A

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10. The zero value of linear polynomial ax - b = ...`

A. $\frac{b}{a}$

B. $\frac{a}{b}$

C. $-\frac{b}{a}$

D. $-\frac{a}{b}$

Answer: A

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11. The product of zeroes of $2x^2 - 3x + 6$ = ...

A. 3

B. -3

C. 2

D. -2

Answer: A

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12. Sum of zeroes of

$bx^2 + ax + c = \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$

A. $\frac{-a}{b}$

B. $\frac{a}{b}$

C. $-\frac{b}{a}$

D. $\frac{b}{a}$

Answer: A

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13. If α, β, γ are zeroes of $x^3 + 3x^2 - x + 2$ the $\alpha\beta\gamma$ = ...

A. 2

B. 3

C. 5

D. -2

Answer: D

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14. If $p(x) = x^2 - ax - 3$ and $p(2) = -3$,

then a = ...

A. 2

B. -2

C. 3

D. -3

Answer: A

Watch Video Solution

15. Product of the zeroes of $p(x) = (x-2)(x+3)$ is ....

A. -6

B. 1

C. -1

D. 6

Answer: A

Watch Video Solution

16. If '4' is one of the zeroes of $p(x) = x^2 + kx - 8$, then the value of k

....

A. 1

B. -1

C. 2

D. -2

Answer: D

Watch Video Solution

17. The degree of the polynomial $\sqrt{2}x^2 - 3x + 1$ = ...

A. $\sqrt{2}$

B. 3

C. 1

D. 2

Answer: D

Watch Video Solution

18. Which of the following equations has the solution of (2, -3) ?

A. $2x - 3y = 10$

B. $2x + 3y = 13$

C. $2x - 3y = 13$

D. $2x + 3y = -13$

Answer: C

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19. If one zero of the polynomial $f(x) = 5x^2 + 13x + k$ is reciprocal of the other , then the value of k= ....

A. 13

B. 5

C. -5

D. $-\frac{13}{5}$

Answer: B

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20. A qudratic polynomial the sum of whose zeroes is zero and one zero is 4, is ....

A. $x^2 - 16$

B. $x^2 + 16$

C. $x^2 - 4$

D. $x^2 + 4$

Answer: A

Watch Video Solution

21. If α, β are the zeroes of $x^2 + x + 1$, then $\frac{1}{\alpha} + \frac{1}{\beta}$ = ...

A. 1

B. -1

C. 2

D. -2

Answer: B

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22. If '3' is one of the zeroes of $p(x) = x^2 + kx - 9$, then the value of k =....................

A. 0

B. 1

C. 2

D. 3

Answer: A

Watch Video Solution

23. The degree of the polynomial $5x^7 - 6x^5 + 7x - 4$ is ....

A. 5

B. 6

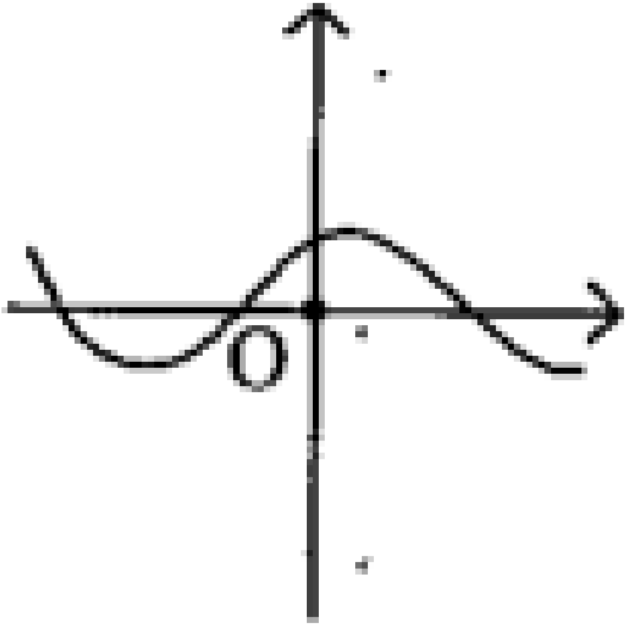
C. 7

D. 4

Answer: C

Watch Video Solution

24. Number of zeroes that can be identified by the following figure ....



A. 0

B. 1

C. 2

D. 3

Answer: A

Watch Video Solution

25. If α, β, γ are the zeroes of the cubic polynomial $ax^3 + bx^2 + cx + d$ and $(a \neq 0)$, then $\alpha\beta\gamma$ = ...

A. $\frac{d}{a}$

B. $-\frac{d}{a}$

C. $-\frac{b}{a}$

D. $\frac{c}{a}$

Answer: B

Watch Video Solution

26. A qudratic polynomial , whose zeroes are $\sqrt{2}$ and $-\sqrt{2}$ is ....

A. $x^2 - 4$

B. $x^2 + 4$

C. $x^2 - 2$

D. $x^2 + 2$

Answer: C

Watch Video Solution

27. Sum of the zeroes of the polynomial $x^2 + 5x + 6$ is ....

A. 5

B. -5

C. 6

D. $\frac{5}{6}$

Answer: B

Watch Video Solution

28. Match of the following :

If α, β, γ are zeroes of a cubic polynomial $ax^3 + bx^2 + cx + d, (a \neq 0)$, then ....

$(i) \alpha + \beta + \gamma$	$(a) - \frac{d}{a}$
$(ii) \alpha\beta + \beta\gamma + \gamma\alpha$	$(b) \frac{c}{a}$
$(iii) \alpha\beta\gamma$	$(c) - \frac{b}{a}$

A. (i) - c , (ii) - b , (iii) -a

B. (i) - a , (ii) - b , (iii) -c

C. (i) - b , (ii) - a , (iii) - c

D. (i) - c , (ii) - a , (iii) - b

Answer: A

Watch Video Solution

29. $5x - 3$ represents .... Polynomial.

A. Linear

B. Quadratic

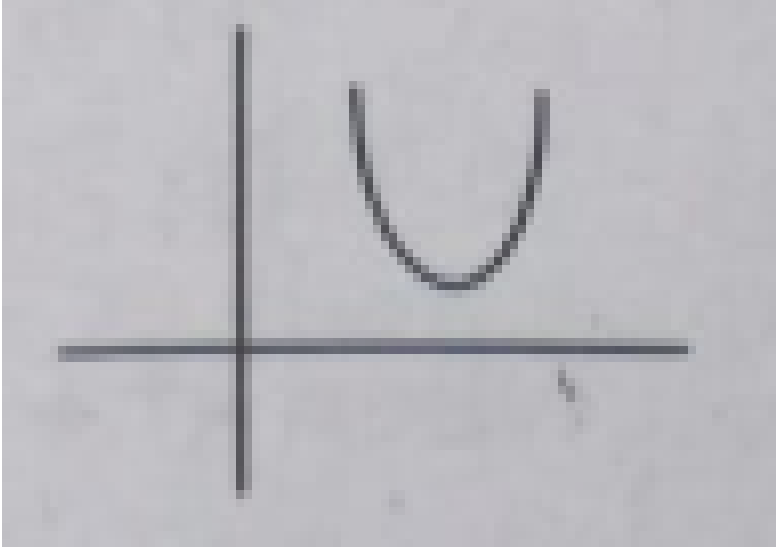
C. Cubic

D. A and B

Answer: A

Watch Video Solution

30. The number of zeros of the polynomial in the graph is ....



A. 0

B. 1

C. 2

D. 3

Answer: D

Watch Video Solution

31. The quadratic polynomial having 2, 3, as zeroes is ....

A. $x^2 - 5x - 6$

B. $x^2 + 5x + 6$

C. $x^2 - 5x + 6$

D. $x^2 + 5x - 6$

Answer: C

32. Which of the following has only one zero?

A. $p(x) = 2x^2 - 3x + 4$

B. $p(x) = x^2 - 2x + 1$

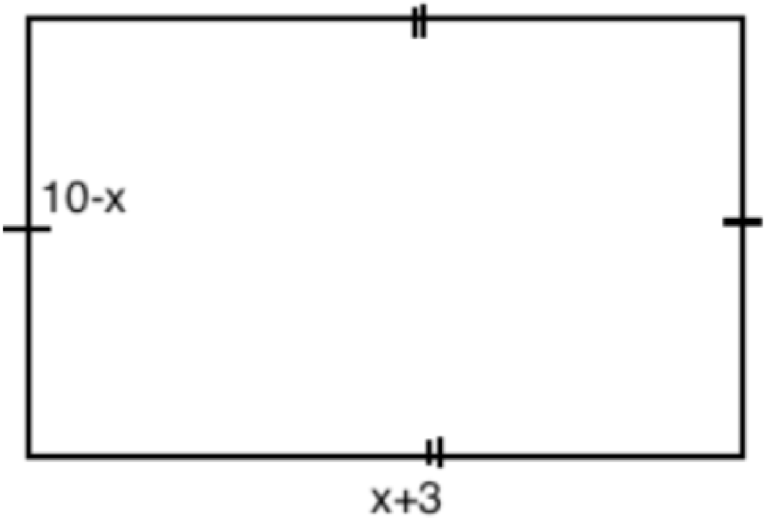
C. $p(x) = 2x + 3$

D. $p(x) = 5$

Answer: C

Watch Video Solution

33. Observe the given rectangular figure, then its area in polynomial function is ....



A. $A(x) = x^2 + 7x + 30$

B. $A(x) = -x^2 + 7x + 30$

C. $A(x) = x^2 - 7x + 30$

D. $A(x) = -x^2 - 7x + 30$

Answer: B

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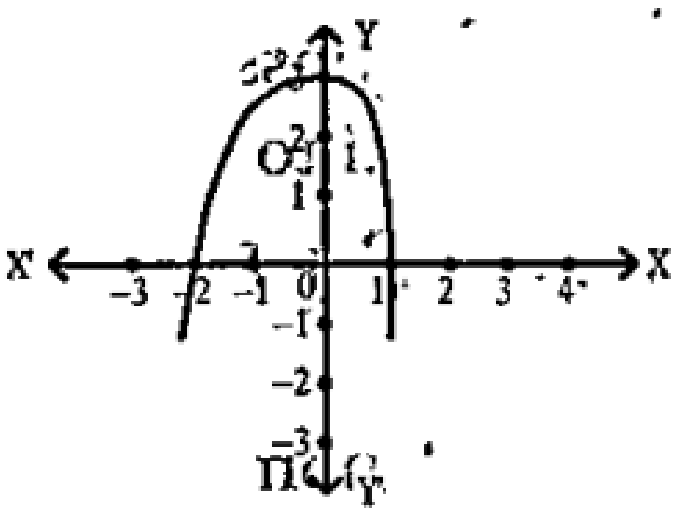
34. The following is the graph of a polynomial. Find the zeroes of the polynomial from the given graph.



A. $-2, 3$

B. $1, 3$

C. $-2, 1$

D. $3, 0$

Answer: C

Watch Video Solution

35. The coefficient of x^7 in the polynomial $7x^{17} - 17x^{11} + 27x^5 - 7$ is ....

A. -1

B. 0

C. 7

D. 17

Answer: B

Watch Video Solution

36. Sum of zeroes of a polynomial $x^3 - 2x^2 + 3x - 4$ is ....

A. -2

B. 2

C. 1

D. 4

Answer: B

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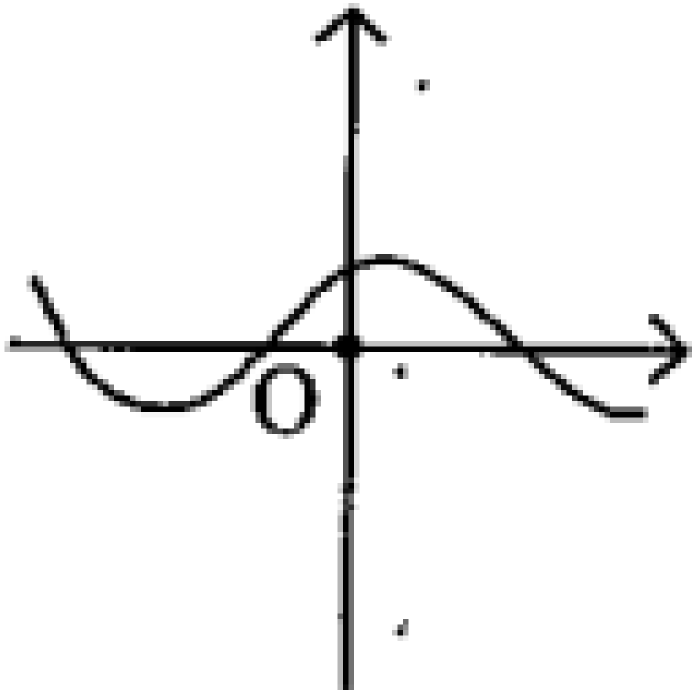
37. The number of zeroes of the polynomial, whose graph is given below:



A. 0

B. 1

C. 2

D. 3

Answer: D

Watch Video Solution

38. The value of x, which satisfies

$$2(x-1)-(1-x)=2x+3$$

A. 2

B. 4

C. 6

D. 8

Answer: C

Watch Video Solution

39. If the polynomial $p(x) = x^3 - x^2 + 3x + k$ is divided by $(x - 1)$, the remainder obtained is 3, then the value of k is

A. 0

B. 1

C. 3

D. -3

Answer: A

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40. In a division, if divisor is x+1 , quotient is x and remainder is 4, then dividend is

A. $x^2 + x$

B. $4(x+1) + x$

C. $x(x+1) + 4$

D. $4x + 4$

Answer: C

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Creative Bits for CCE Model Examination

1. A quadratic polynomial whose zeroes are 5 and -2 is

A. $x^2 + 5x - 2$

B. $x^2 + 3x - 10$

C. $x^2 - 3x - 10$

D. $x^2 - 2x - 5$

Answer: C

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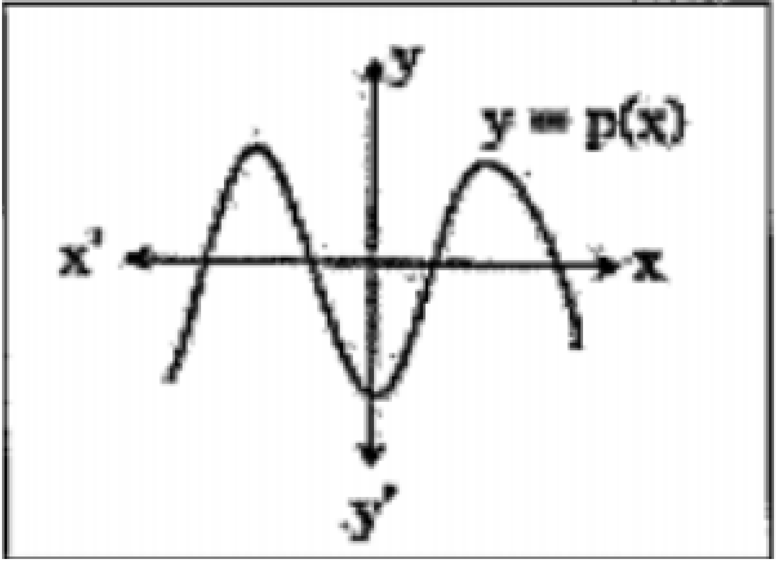
2. If y = p(x) is represented by the given graph, then the number of zeroes are



A. 2

B. 3

C. 4

D. 1

Answer: C

3. If $\sqrt{3}$ and $-\sqrt{3}$ are the zeroes of a polynominal p(x), then p(x) is

A. $x^2 - 9$

B. $3x^2 - 1$

C. $x^2 + 3$

D. $x^2 - 3$

Answer: D

4. The quadratic polynomial whose zeroes are $\sqrt{15}$ and $-\sqrt{15}$ is

A. $x^2 - 15$

B. $x^2 - 225$

C. $15x^2 - 1$

D. $x^2 - \sqrt{15}$

Answer: A

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5. If one zero of the quadratic polynomial $2x^2 + kx - 15$ is 3, then the other zero is

A. $\frac{-15}{2}$

B. k

C. $\frac{-5}{2}$

D. -15

Answer: C

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6. The maximum number of zeroes that a polynomial of degree 3 can have is

A. three

B. one

C. two

D. None

Answer: A

Watch Video Solution

7. The product and sum of the zeroes of the quadratic polynomial $ax^2 + bx + c$ respectively are

A. $\frac{c}{b}, 1$

B. $\frac{-b}{a}, \frac{c}{a}$

C. $\frac{c}{a}, \frac{b}{a}$

D. $\frac{c}{a}, \frac{-b}{a}$

Answer: D

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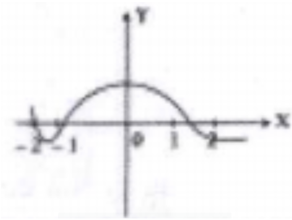
8. The number of zeroes of the polynomial function p(x) whose graph is given below is



A. 1

B. 2

C. 0

D. 3

Answer: D

Watch Video Solution

9. The zeroes of the polynomial $p(x) = 4x^2 - 12x + 9$ are

A. $\frac{-3}{2}, \frac{-3}{2}$

B. $-3, -4$

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

D. $3, 4$

Answer: C

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10. If α and β are zeroes of the polynomial $p(x) = x^2 - 5x + 6$, then the value of $\alpha + \beta - 3\alpha\beta$ is

A. -13

B. 6

C. 13

D. -5

Answer: A

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11. The graph of the polynomial $f(x) = 2x - 5$ is a straight line which intersects the X - axis at exactly one point namely.

A. $\left[0, \frac{-5}{2}\right]$

B. $\left[\frac{5}{2}, \frac{-5}{2}\right]$

C. $\left[\frac{5}{2}, 0\right]$

D. $\left[\frac{-5}{2}, 0\right]$

Answer: C

Watch Video Solution

12. If 1 is the zero of the quadratic polynomial $x^2 + kx - 5$, then the value of k is

A. 0

B. 5

C. -4

D. 4

Answer: D

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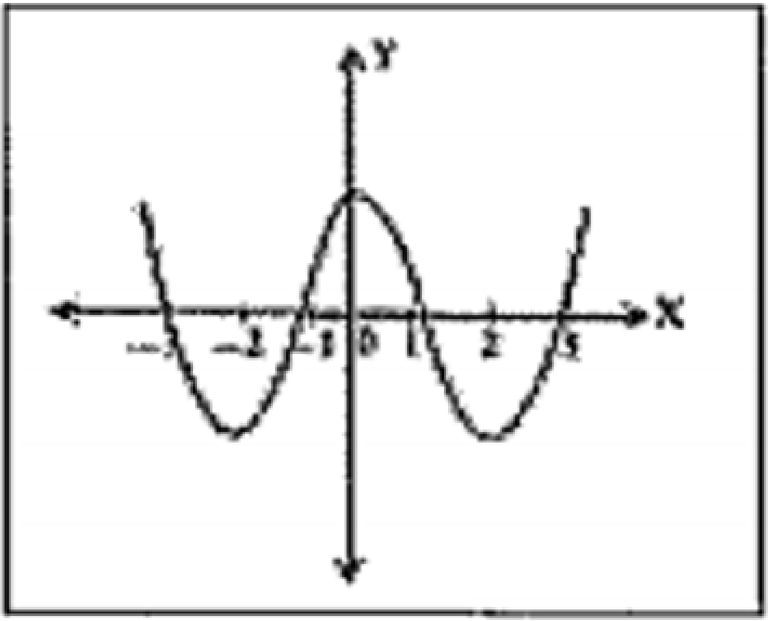
13. The number of zeroes lying between -2 and 2 of the polynomial f(x) whose graph is given below is



A. 3

B. 4

C. 2

D. 1

Answer: C

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14. If both the zeroes of a quadratic polynomial $ax^2 + bx + c$ are equal and opposite in sign, then b is

A. -1

B. 5

C. 1

D. 0

Answer: D

Watch Video Solution

15. Sum and product of the zeroes of polynomial $x^2 - 3$ are respectively.

A. 0,3

B. 0,-3

C. $-3, 0$

D. 3,0

Answer: B

Watch Video Solution

16. If the zeroes of quadratic polynomial are equal in magnitude but opposite in sign, then

A. product of its zeroes is 0

B. sum of its zeroes is 0

C. there are no zeroes of the polynomial

D. one of the zero is 0

Answer: B

Watch Video Solution

17. If one of the zeroes of the quadratic polynomial $ax^2 + bx + c$ is 0, then the other zero is

A. $\frac{b}{a}$

B. $\frac{-c}{a}$

C. $\frac{-b}{a}$

D. 0

Answer: C

Watch Video Solution

18. The polynomial whose zero are -5 and 4 is

A. $x^2 + x - 20$

B. $x^2 + 5x - 4$

C. $x^2 - 9x - 20$

D. $x^2 - 5x + 4$

Answer: A

Watch Video Solution

19. If -1 is a zero of the polynomial $f(x) = x^2 - 7x - 8$, then the other zero is

A. 8

B. -8

C. 1

D. 6

Answer: A

Watch Video Solution

20. If one zero of the quadratic polynomial $x^2 - 5x - 6$ is 6, then the other zero is

A. 1

B. -5

C. -1

D. -6

Answer: C

Watch Video Solution

21. If α and β are the zeros of the polynomial $f(x) = x^2 + px + q$, then a polynomial having $\frac{1}{\alpha}$ and $\frac{1}{\beta}$ as its zeros is ....

A. $qx^2 + px + 1$

B. $qx^2 + px + 10$

C. $px^2 + qx + 1$

D. none

Answer: A

Watch Video Solution

22. If $f(x) = ax^2 + bx + c$ has no real zeros and a+b+c<0 then.....

A. c = 0

B. c lt 9

C. c lt 0

D. c gt 0

Answer: C

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23. If α, β, γ are the zeros of the polynomial $f(x) = ax^3 + bx^2 + cx + d$ then $\frac{1}{\alpha} + \frac{1}{\beta} + \frac{1}{\gamma}$ = ...

A. $\frac{1}{d}$

B. $\frac{1}{c}$

C. $\frac{c}{d}$

D. $-\frac{c}{d}$

Answer: D

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24. If the product of zeros of the polynomial $f(x) = ax^3 - 6x^2 + 11x - 6$ is 4, then $a =$

(a) $\frac{3}{2}$ (b) $-\frac{3}{2}$ (c) $\frac{2}{3}$ (d) $-\frac{2}{3}$

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

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

C. -1

D. 9

Answer: B

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25. If the order of $ax^5 + 3x^4 + 4x^3 + 3x^2 + 2x + 1$ is 4 then a = ...

A. 5

B. 4

C. 0

D. not possible

Answer: C

Watch Video Solution

26. If one zero of the polynomial $f(x) = 5x^2 + 13x + k$ is reciprocal of the other , then the value of k= ....

A. 5

B. -5

C. 1

D. none

Answer: A

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27. If α, β are the zeros of polynomial $f(x) = x^2 - p(x+1) - c$ then $(\alpha+1)(\beta+1)$ = ...

A. a

B. $1 + c$

C. $1 - c$

D. c

Answer: C

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28. If the sum of the zeros of the polynomial $f(x) = 2x^3 - 3kx^2 + 4x - 5$ is 6 then k = ...

A. -1

B. 9

C. 0

D. 4

Answer: D

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29. If α, β, γ are the zeros of the polynomial $f(x) = ax^3 + bx^2 + cx + d$ then $(\alpha)^2 + (\beta)^2 + (\gamma)^2$ = ...

A. $\dfrac{b^2 + 4ac}{2}$

B. $\dfrac{b^2 - 2ac}{a^2}$

C. $\dfrac{b + 2ac}{a^2}$

D. none

Answer: B

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30. If the polynomial $f(x) = ax^3 + bx - c$ is divisible by the polynomial $g(x) = x^2 + bx + c$ then ab = ...

A. 1

B. 7

C. -1

D. 0

Answer: A

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31. The product of the zeros of $x^3 + 4x^2 + x - 6$ is ....

A. 8

B. 7

C. 6

D. -6

Answer: C

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Watch Video Solution

32. A quadratic polynomial , the sum of whose zeroes of 0 and one zero is 3 is ....

A. $x^2 + 3$

B. $x - 3$

C. $x^2 - 9$

D. $x^2 - 3$

Answer: C

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33. If $\sqrt{5}$ and $-\sqrt{5}$ are two zeros of the polynomial $x^3 + 3x^2 - 5x - 15$ then its third zero is ....

A. 7

B. 3

C. -3

D. None

Answer: C

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34. If α, β, γ are the zeros of the polynomial $x^3 - px^2 + qx - r$ then $\frac{1}{\alpha\beta} + \frac{1}{\beta\gamma} + \frac{1}{\gamma\alpha}$ = ...

A. $\frac{r}{p}$

B. $\frac{p}{r}$

C. $-r$

D. none

Answer: B

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35. If $x+2$ is a factor of $x^2+ax+2b$ and $a+b=4$ then a = ...

A. 3

B. 2

C. -1

D. 4

Answer: A

Watch Video Solution

36. In the above problem b = ...

A. 9

B. 0

C. -1

D. 1

Answer: D

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37. If one zero of the polynomial $f(x) = (k^2 + 4)x^2 + 13x + 4k$ is reciprocal of the other then k = ...

A. -2

B. 2

C. 9

D. 1

Answer: B

Watch Video Solution

38. If two zeros of $x^3 + x^2 - 5x - 5$ are $\sqrt{5}$ and $-\sqrt{5}$ then its third zero is ....

A. -3

B. 2

C. -1

D. none

Answer: C

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39. If zeros of polynomial $f(x0 = x^3 - 3px^2 + qx - r$ are in AP then $2p^3$ = ...

A. pq-r

B. p-r

C. pq+1

D. p+q-r

Answer: A

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40. If α, β are the zeros of the polynomial $f(x) = ax^2 + bx + c$ then $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$ = ...

A. $b^2 - 2ac$

B. $\frac{b - 4ac}{c}$

C. $\frac{b - 4ac}{c^2}$

D. $\frac{b^2 - 2ac}{c^2}$

Answer: D

Watch Video Solution

41. What should be subtracted from the polynomial $x^2 - 16x + 30$ so that 15 is the zero of the resulting polynomial?

A. 15

B. -1

C. -15

D. none

Answer: A

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42. From the graph the number of zeros of the polynomial is ....

A. 1

B. 2

C. 4

D. 7

Answer: B

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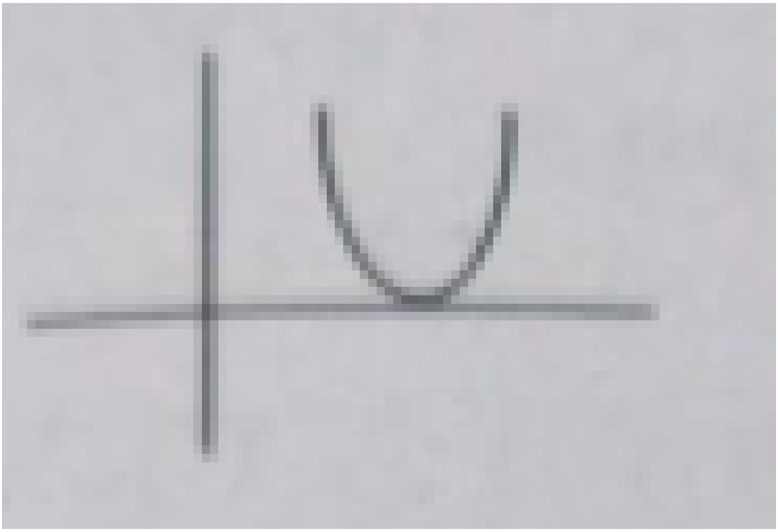
43. The number of zeros of the polynomial in the graph is ....



A. 2

B. -1

C. 4

D. 1

Answer: D

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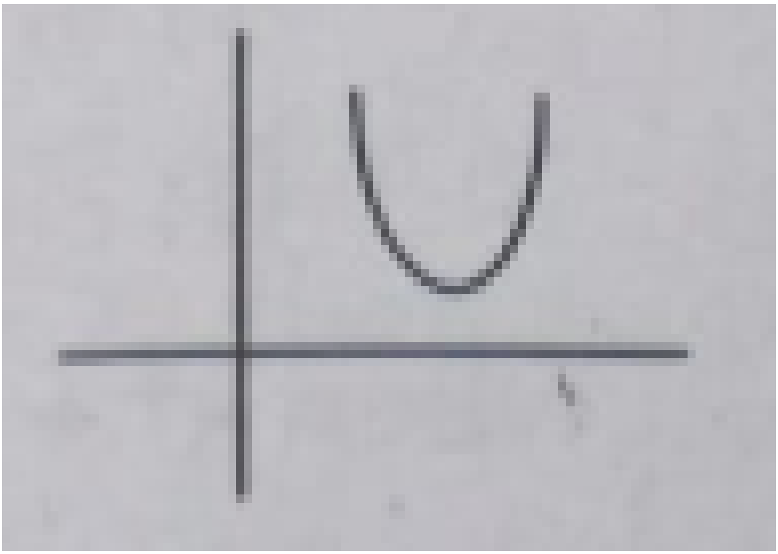
44. The number of zeros of the polynomial in the graph is ....



A. 1

B. -2

C. 0

D. 4

Answer: C

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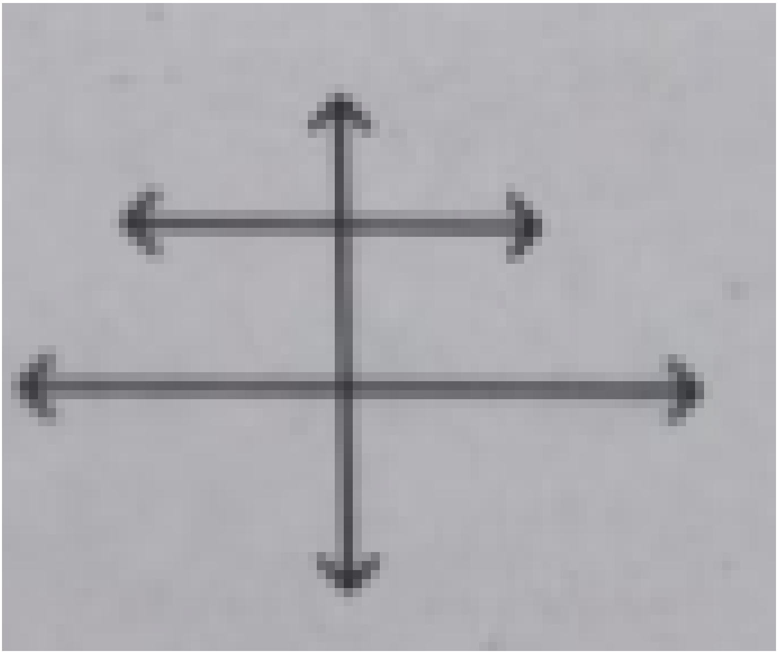
45. The below graph represents



A. polynomial

B. not a polynomial

C. two zeros

D. none

Answer: B

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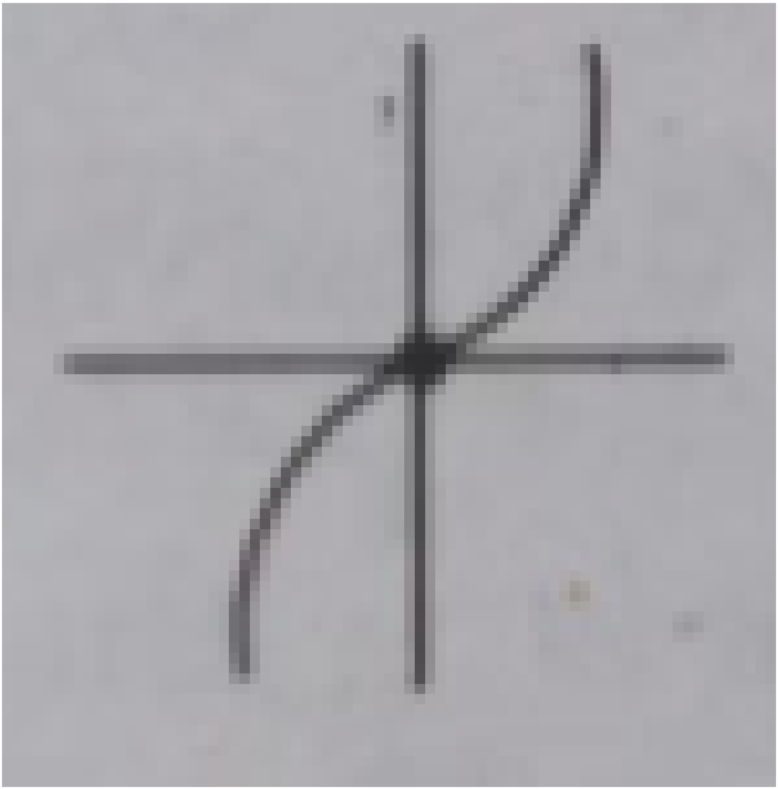
46. The graph represents ....



A. cubic polynomial

B. quadratic polynomial

C. straight line

D. none

Answer: A

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47. $ax + b$ represents .... polynomial.

A. quadratic

B. cubic

C. linear

D. none

Answer: C

Watch Video Solution

48. $ax^2 + bx + c$ is a .... polynomial.

A. quadratic

B. linear

C. cubic

D. fourth

Answer: A

Watch Video Solution

49. Which of the following is a cubic polynomial in general form?

A. $bx^2 + c^3x + x + 1$

B. $ax^3 + bx^2 + cx + d$

C. $x^2 + 2^3$

D. none

Answer: B

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50. The degree of the polynomial $ax^4 + bx^3 + cx^2 + dx + e$ is ....

A. 5

B. 4

C. 6

D. 0

Answer: B

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51. $a_0x^n + a_1x^{n-1} + a_2x^{n-2} + \ldots\ldots\ldots a_nx^n$

is polynomial of degree ....

A. 1

B. n-2

C. n

D. n^2

Answer: C

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52. If a>0 then the shape of $ax^2+bx+c=0$ is ......

A. 

B. 

C.

D.

Answer: A

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53. If a<0 then the shape of $ax^2 + bx + c = 0$ is ,........

A.

B.

C.

D.

Answer: D

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54. If α, β, γ are roots of a cubic polynomial

$\alpha+\beta+\gamma$ = ...

A. $\frac{c}{a}$

B. $\frac{b}{a}$

C. $\frac{-b}{a}$

D. None

Answer: C

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55. If α, β, γ are roots of a cubic polynomial then $\alpha\beta + \beta\gamma + \gamma\alpha$ = ...

A. $\frac{-c}{a}$

B. $\frac{c}{a}$

C. $\frac{a}{c}$

D. $\frac{1}{c}$

Answer: B

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56. " Every quadratic polynomial will have 2 zeros". This is ....

A. false

B. sometimes true

C. always true

D. can't be determined

Answer: A

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57. $f(x) = 3x - 2$ then zero of f(x) is ....

A. $\frac{1}{2}$

B. $\frac{1}{3}$

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

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

Answer: D

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58. $p(t) = t^3 - 1, p(-2)$ = ...

A. -9

B. -4

C. 1

D. 0

Answer: A

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59. $p(x) = x^2 + 5x + 6$ then zeros of p(x) =

....

A. $-2, \ -3$

B. $3, \ -2$

C. $4, 1$

D. $1, 8$

Answer: A

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60. $p(x) = 4x^2 + 3x - 1$ then $p\left(\frac{1}{4}\right)$ = ...

A. 1

B. 0

C. -1

D. 12

Answer: B

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61. $x^2 + 7x + 10$= ....

A. $(x+3)^2$

B. $(x+2)^2$

C. $(x-2)(x-3)$

D. $(x+2)(x+5)$

Answer: D

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62. $p(x) = x^3 + 4x^2 + 5x - 2$ then p(1) = ...

A. 8

B. 7

C. 3

D. none

Answer: A

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63. $p(x) = 3x^3 - 2x^2 + 6x - 5$ then p(2) = ...

A. 19

B. 10

C. 12

D. 23

Answer: D

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64. If m and n zeros of the polynomial $3x^2 + 11x - 4$ then the value of $\frac{m}{n} + \frac{n}{m}$ =

....

A. $\frac{4}{11}$

B. $\frac{4}{7}$

C. $\frac{11}{4}$

D. none

Answer: D

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65. Sum of the zeros of $x^2 + 7x + 10$ is

....

A. 7

B. -3

C. 4

D. none

Answer: D

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66. The quadratic polynomial, whose sum and product of zeros are 1 and -2 respectively is ....

A. $x^2 + x + 2$

B. $x^2 - x - 2$

C. $x^2 - 3x - 1$

D. $x^2 - 3x - 2$

Answer: B

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67. If p and q are the zeros of the polynomial $t^2 - 4t + 3$ then $\frac{1}{p} + \frac{1}{q} - 2pq + \frac{14}{3} = \ldots\ldots\ldots\ldots$

A. 0

B. -1

C. 2

D. 3

Answer: A

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68. A polynomial of degree 3 is called .... Polynomial.

A. zero

B. order

C. quadratic

D. cubic

Answer: D

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69. The quotient when $x^4 + x^3 + x^2 - 2x - 3$ is divided by $x^2 - 2$ is ....

A. $x^2 + x + 3$

B. $x - 2$

C. $x^2 + 3x + 1$

D. none

Answer: A

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70. Divide $\left(x^3 - 6x^2 + 11x - 12\right)$ by $\left(x^2 - x + 2\right)$ then quotient is ....

In the above problem the remainder is

A. -1

B. 4

C. 3

D. -3

Answer: C

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71. One zero of the polynomial $2x^2 + 3x + kis \frac{1}{2}$ then k = ...

A. 4

B. 1

C. 2

D. -2

Answer: D

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72. In the above problem other zero is ....

A. -2

B. 2

C. 3

D. 4

Answer: A

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73. Sum of the zeros of $6x^2 = 1$ is ....

A. 3

B. 2

C. 0

D. -1

Answer: C

Watch Video Solution

74. What must be subtracted or added to $p(x) = 8x^4 + 14x^3 - 2x^2 + 8x - 12$ so that $4x^2 + 3x - 2$ is a factor of p(x)?

A. $5x - 3$

B. $15x - 1$

C. $5x - 2$

D. 15-14`

Answer: D

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75. The quadratic polynomial whose zeroes are $4 + \sqrt{5}$ and $4 - \sqrt{5}$ is ....

A. $x^2 + 8x + 11$

B. $x^2 - 11x + 1$

C. $x^2 + 8x + 3$

D. none

Answer: A

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76. If one of the zeros of the quadratic polynomial $f(x) = 14x^2 - 42k^2x - 9$ is negative of the other then k = ...

A. 3

B. -1

C. 0

D. none

Answer: C

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77. If one zero of a polynomial $3x^2 - 8x + 2k + 1 = 0$ is seven times the other then k = ...

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

B. $\frac{1}{3}$

C. 1

D. none

Answer: A

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78. If $2x+3$ is a factor of $2x^3-x-b+9x^2$

then the value of b is ....

A. 3

B. 7

C. 10

D. 15

Answer: D

Watch Video Solution

79. Divide $\left(x^3 - 6x^2 + 11x - 12\right)$ by $\left(x^2 - x + 2\right)$ then quotient is ....

A. $x+5$

B. $x-5$

C. $x+1$

D. none

Answer: B

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80. In the above problem remainder is ....

A. $2x-1$

B. $x + 1$

C. $4x - 2$

D. none

Answer: C

View Text Solution

81. If α and β are the zeros of the polynomial $p(x) = 2x^2 + 5x + k$ satishfying the relation $\alpha^2 + \beta^2 + \alpha\beta = \frac{21}{4}$ then k = ...

A. 1

B. $\frac{2}{7}$

C. 2

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

Answer: C

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82.

$$\left(x-\sqrt{\frac{5}{3}}\right)\left(x+\sqrt{\frac{5}{3}}\right)=\ldots\ldots\ldots\ldots\ldots$$

A. $x-\frac{5}{3}$

B. $x^2-\frac{5}{3}$

C. $x^2-\frac{3}{5}$

D. x^2-1

Answer: B

Watch Video Solution

83. Product of zeros of $3x^2=1$ is ....

A. -1

B. -2

C. 3

D. $-\frac{1}{3}$

Answer: D

Watch Video Solution

84. Degree of '1' is ....

A. 1

B. 3

C. 0

D. 7

Answer: C

Watch Video Solution

85. Degree of $5x^7 - 6x^5 + 7x + 1$ is ....

A. 4

B. 1

C. 7

D. 3

Answer: C

Watch Video Solution

86. $(3x-4)(x+1)$= ....

A. x^2-3x+1

B. x^2-x+4

C. x^2-3x+7

D. $3x^2-x-4$

Answer: D

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87. $\left(x^2 - 3x - 28\right) \div (x + 4)$ = ...

A. x-7

B. x+7

C. x+3

D. x-1

Answer: A

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88. $f(x) = 4x^2 + 4x - 3$ then $f\left(\frac{-3}{2}\right)$ = ...

A. 0

B. -1

C. 1

D. 7

Answer: A

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89. In the above problem $f\left(\frac{1}{2}\right) = \ldots\ldots\ldots\ldots$

A. 1

B. 7

C. 9

D. 0

Answer: D

View Text Solution

90. $\left(x+\sqrt{5}\right)\left(x-3\sqrt{5}\right) = \ldots\ldots\ldots$

A. $x^2 - 2\sqrt{5} + 15$

B. $x^2 - 2\sqrt{5}x - 15$

C. $x^2 - \sqrt{5}x + 15$

D. none

Answer: B

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91.

$\left(-x^3+3x^2-3x+5\right) \div \left(-x^2+x-1\right)$ =

....

A. $x+2$

B. $x-2$

C. $x-1$

D. $x+3$

Answer: B

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92. The remainder when $3x^3 + x^2 + 2x + 5$ is divided by $x^2 + 2x + 1$ is ....

A. $9x + 10$

B. $x + 10$

C. $x - 1$

D. $9x - 1$

Answer: A

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93. $\alpha = a - b, \beta = a + b$ then the quadratic polynomial is ....

A. $x^3 - a^2x + b^2$

B. $x^2 - a^3x + a^2$

C. $x^2 - ax + a^2 + b^2$

D. $x^2 - 2ax + a^2 - b^2$

Answer: D

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94. If the product of zeros of $9x^2 + 3x + p$ is 7 then p ....

A. 14

B. -63

C. 63

D. 70

Answer: C

Watch Video Solution

95. Degree of $(x-2)(x-3)$ is ....

A. 3

B. 2

C. 1

D. 7

Answer: B

Watch Video Solution

96. The value of $x^{15} - 1$ at x = 0 is ....

A. 3

B. 9

C. 7

D. -1

Answer: D

Watch Video Solution

97. Zeros of the polynomial $x^2 - 4x + 3$ and 1 and p the p = ...

A. 7

B. 3

C. 1

D. none

Answer: B

Watch Video Solution

98. Degree of a linear polynomial is ....

A. 2

B. 3

C. 7

D. 1

Answer: D

Watch Video Solution

99. $(a+1)^2$= ....

A. $a^2 + 1$

B. $a^2 + 2 + a$

C. $a^2 + 2a + 1$

D. none

Answer: C

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100. $\alpha + \beta = 0, \alpha\beta = \sqrt{3}$ then the quadratic polynomial is ....

A. $x^2 + 1$

B. $x + \sqrt{3}$

C. $x - 3$

D. $x^2 + \sqrt{3}$

Answer: D

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101. $\left(x^3 - 8\right) \div x^2 + 2x + 4$

A. $x - 7$

B. $x - 1$

C. $x - 2$

D. none

Answer: C

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102. $p(x) = \dfrac{x+1}{1-x}$ then P(0) = ...

A. 1

B. -1

C. 2

D. 3

Answer: A

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103. $\left(x-\sqrt{3}\right)\left(x+\sqrt{3}\right)$ = ...

A. $x+3$

B. x^2-3

C. $x-7$

D. none

Answer: B

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104. If one zero of the polynomial is $\sqrt{2}-1$ then other zero may be ....

A. $1+\sqrt{3}$

B. -$\sqrt{2}-1$

C. $\sqrt{2}-2$

D. all

Answer: B

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105. Binomial contains almost .... Terms.

A. 5

B. 4

C. 1

D. 2

Answer: D

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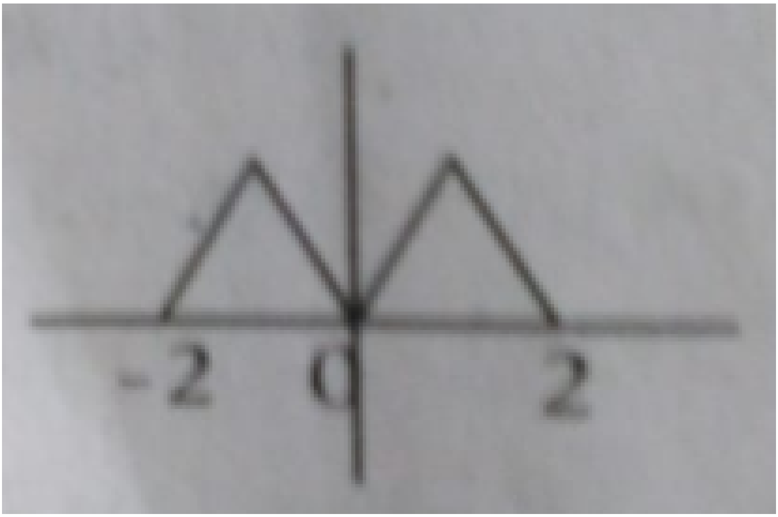
106. The zeros from the below graph are ....



A. -2

B. 0

C. 2

D. all

Answer: D

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107. $p(x) = \frac{12}{x-3}$, $p(3)$ = ...

A. 1

B. 12

C. 0

D. not defined

Answer: D

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108. $p(x) = x^2 - x + k, p(1) = -1$ then k = ...

A. -1

B. 1

C. 3

D. 2

Answer: A

Watch Video Solution

109. $p(-3)=0$ then p(x) = ...

A. $x-7$

B. $x+1$

C. $x-4$

D. $x + 3$

Answer: D

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110. Number of constant terms in the polynomial $x^2 + 7x - 7$ is ....

A. 2

B. 1

C. 3

D. -2

Answer: B

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111. In the product $(x+4)(x+2)$ the constant term is ....

A. 7

B. -3

C. 6

D. 8

Answer: D

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112. $\left(\sqrt{x}-\sqrt{y}\right)\left(\sqrt{x}+\sqrt{y}\right)$ = ...

A. $x+\sqrt{y}$

B. $x+y$

C. $x-y$

D. $\sqrt{x}+y$

Answer: C

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113. $p\left(\frac{a}{b}\right) = 0$ then p(x) = ...

A. $ax - b$

B. $bx - a$

C. ax

D. bx

Answer: B

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114. $a(a+1)(a+2)(a+3) \div a(a+3)$= ....

A. $(a+1)(a+2)$

B. $(a+1)^2$

C. $(a+2)^2$

D. none

Answer: A

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115. $(x^2 - 8x + 12) \div (x - 6)$ = ...

A. $x + 3$

B. $x + 1$

C. $x + 2$

D. $x - 2$

Answer: D

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116. Factors of $x^{2}+x(a+b)+ab$ = ...

A. $x+a$

B. $x+b$

C. both A & B

D. none

Answer: C

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117. $x\left(3x^{2}-108\right) \div 3x(x-6)$ = ...

A. $x+3$

B. $x-6$

C. $x+6$

D. $x-7$

Answer: C

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118. $(p+4)(p-4)\left(p^2+16\right)$ = ...

A. p^4-16

B. p^4+256

C. p^3-100

D. p^4-256

Answer: D

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119. $36(x+4)\left(x^2+7x+10\right) \div 9(x+4)$ =

....

A. $4(x+5)(x+2)$

B. $(x+5)(x-7)$

C. $(x+5)(3x-1)$

D. none

Answer: A

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EXERCISE

1. State which of the following are polynomial and which are not ? Give resons.

(i) $2x^3$

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2. State which of the following are polynomial and which are not ? Give resons.

(ii) $\frac{1}{x-1}$

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3. State which of the following are polynomial and which are not ? Give resons.

(iii) $4z^2 + \frac{1}{7}$

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4. State which of the following are polynomial and which are not ? Give resons.

(iv) $m^2 - \sqrt{2}m + 2$

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5. State which of the following are polynomial and which are not ? Give resons.

(v) $p^{-2}+1$

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6. If $p(x)=x^2-5x-6$, then find the values of

$p(1), p(2), p(3), p(0), p(-1), p(-2), p(-3)$

.

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7. If $p(m) = m^2 - 3m + 1$, then find the value of $p(1)$ and $p(-1)$.

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8. Let $p(x) = x^2 - 4x + 3$. Find the value of $p(0), p(1), p(2), p(3)$ and obtain zeroes of the polynomial $p(x)$.

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9. Check wheather -3 and 3 are the zeroes of the polynomial $x^2 - 9$.

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10. Write 3 different quadratic, cubic and 2 linear polynomials with different number of terms.

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11. Write a quadratic polynomial and a cubic polynomial in variable x in the general form.

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12. Write a general polynomial q(z) of degree n with coefficients that are $b_0 \dots b_n$. What are the conditions on $b\_(0) \dots \dots b_n$?

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13. In $p(x) = 5x^7 - 6x^5 + 7x + 6$, what is the (i) coefficient of x^5 (ii) degree of $p(x)$ (iii) constant term.

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14. In $p(x) = 5x^7 - 6x^5 + 7x + 6$, what is the (i) coefficient of x^5 (ii) degree of $p(x)$ (iii) constant term.

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15. In $p(x) = 5x^7 - 6x^5 + 7x + 6$, what is the (i) coefficient of x^5 (ii) degree of $p(x)$ (iii) constant term.

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16. State which of the following statements are true and which are false ? Give reasons for your choice.

The degree of the polynomial $\sqrt{2}x^2 - 3x + 1$ is $\sqrt{2}$.

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17. State which of the following statements are true and which are false ? Give reasons for your choice.

The coefficient of x^2 in the polynomial $p(x) = 3x^3 - 4x^2 + 5x + 7$ is 2

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18. State which of the following statements are true and which are false ? Give reasons for your choice.

the degree of a constant term is zero.

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19. State which of the following statements and true and which are false? Give reasons for your choice.

(iv) $\frac{1}{x^2 - 5x + 6}$ is a quadratic polynomial.

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20. State which of the following statements are true and which are false ? Give reasons for your choice.

The degree of a polynomial is one more than the number of term in it.

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21. If $p(t) = t^3 - 1$, find the values of $p(1), p(-1), p(0), p(2), p(-2)$.

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22. Check whether -2 and 2 are the zeroes of the polynomial $x^4 - 16$.

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23. Check whether 3 and -2 are the zeroes of the polynomial $p(x)$ when $p(x) = x^2 - x - 6$.

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24. Write three quadratic polynomials that have 2 zeroes each.

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25. Write one quadratic polynomial that has one zero.

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26. How will you verify if a quadratic polynomial has only zero ?

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27. Write three qudratic polynomial that have no zeroes for x that are real numbers.

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28. Find the zeroes of cubic polynomials

(i) $-x^3$ without drawing the graph of the polynomial.

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29. Find the zeroes of cubic polynomials

(ii) $x^2 - x^3$ without drawing the graph of the polynomial.

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30. Find the zeroes of cubic polynomials

(iii) $x^3 - 5x^2 + 6x$ without drawing the graph of the polynomial.

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31. Find the number zeroes of the given polynomials. And also find their values.

$p(x) = 2x + 1$

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32. Find the number of zeroes of the given polyminals. And also find their values.

(ii) $q(y) = y^2 - 1$

Watch Video Solution

33. Find the number zeroes of the given polynomials. And also find their values.

$r(z) = z^3$

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34. Find the zeroes of the given polynomials.

$p(x) = 3x$

Watch Video Solution

35. Find the zeroes of the given polynomials.

$p(x) = x^2 + 5x + 6$

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36. Find the zeroes of the given polynomials.

$$p(x) = (x+2)(x+3)$$

Watch Video Solution

37. Find the zeroes of the given polynomials.

$$p(x) = x^4 - 16$$

Watch Video Solution

38. Draw the graphs of the given polynomial and find the zeroes. Justify the answer.

(i) $p(x) = x^2 - x - 12$

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39. Draw the graphs of the given polynomial and find the zeroes. Justify the answers.

$p(x) = x^2 - 6x + 9$

Watch Video Solution

40. Draw the graphs of the given polynomial and find the zeroes. Justify the answers.

$p(x) = x^2 - 6x + 9$

Watch Video Solution

41. Draw the graphs of the given polynomial and find the zeroes. Justify the answer.

(iv) $p(x) = x^2 + 3x - 4$

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42. Draw the graphs of the given polynomial and find the zeroes. Justify the answer.

(v) $p(x) = x^2 - 1$.

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43. Why are $\frac{1}{4}$ and -1 zeroes of the polynomial $p(x) = 4x^2 + 3x - 1$?

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44. Find the zeroes of the quadratic polynomials given below. Find the sum and product of the zeroes and verify relationship to the coefficients of terms in the polynomials.

(i) $p(x) = x^2 - x - 6.$

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45. Find the zeroes of the quadratic polynomials given below. Find the sum and product of the zeroes and verify relationship to the coefficients of terms in the polynomials.

(ii) $p(x) = x^2 - 4x + 3$.

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46. Find the zeroes of the quadratic polynomials given below. Find the sum and product of the zeroes and verify relationship to the coefficients of terms in the polynomials.

(iii) $p(x) = x^2 - 4$

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47. Find the zeroes of the quadratic polynomials given below. Find the sum and product of the zeroes and verify relationship to the coefficients of terms in the polynomials.

(iv) $p(x) = x^2 + 2x + 1.$

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48. Find a quadratic polynomial with zeroes -2 and $\frac{1}{3}$.

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49. What is the quadratic polynomial whose sum of zeroes is $\frac{-3}{2}$ and the product of zeroes is -1.

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50. Find the zeroes of the quadratic polynomial $x^2 + 7x + 10$, and verify the relationship between the zeroes and the coefficients.

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51. Find the zeroes of the polynomial $x^2 - 3$ and verify the relationship between the zeroes and the coefficients.

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52. Find a quadratic polynomial, the sum and product of whose zeroes are -3 and 2 respectively.

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53. Find a quadratic polynomial if the zeroes of it are 2 and $\frac{-1}{3}$ respectively.

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54. Verify that $3, -1, -\frac{1}{3}$ are the zeroes of the cubic polynomial $p(x) = 3x^2 - 5x^2 - 11x - 3$, and then verify the relationship between the zeroes and the coefficients.

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55. Find the zeroes of the following quadratic polynomials and verify relationship between the zeroes and the coefficients.

$x^2 - 2x - 8$

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56. Find the zeroes of the following quadratic polynomials and verify relationship between the zeroes and the coefficients.

$4s^2 - 4s + 1$

Watch Video Solution

57. Find the zeroes of the following quadratic polynomials and verify relationship between the zeroes and the coefficients.

$6x^2 - 3 - 7x$

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58. Find the zeroes of the following quadratic polynomials and verify relationship between

the zeroes and the coefficients.

$4u^2 + 8u$

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59. Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients.

(v) $t^2 - 15$

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60. Find the zeroes of the following quadratic polynomials and verify relationship between the zeroes and the coefficients.

$3x^2 - x - 4$

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61. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

(i) $\frac{1}{4}, \ -1$

62. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

$\sqrt{2}, \frac{1}{3}$

63. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

$0, \sqrt{5}$

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64. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

(iv) 1,1

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65. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

$-\frac{1}{4}, \frac{1}{4}$

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66. Find the quadratic polynomial in each case, with the given numbers as the sum and product of its zeroes respectively.

4,1

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67. Find the quadratic polynomial, for the zeroes α, β given in each case.

$2, \ -1$

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68. Find the quadratic polynomial, for the zeroes α, β given in each case.

$\sqrt{3}-\sqrt{3}$

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69. Find the quadratic polynomial, for the zeroes α, β given in each case.

$\frac{1}{4}, -1$

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70. Find the quadratic polynomial, for the zeroes α, β given in each case.

$\frac{1}{2}, \frac{3}{2}$

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71. Verify that $1, \ -1$ and $+3$ are the zeroes of the cubic polynomial $x^3 - 3x^2 - x + 3$ and check the relationship between zeroes and the coefficients.

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72. Divide $2x^2 + 3x + 1byx + 2.$

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73. Divide $3x^2 + x^2 + 2x + 5$by $1 + 2x + x^2$.

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74. Divide $3x^2 - x^3 - 3x + 5$ by $x - 1 - x^2$, and verify the division algorithm.

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75. Find all the zeroes of $2x^4 - 3x^3 - 3x^2 + 6x - 2$, if you know that two of its zeroes are $\sqrt{2}$ and $-\sqrt{2}$.

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76. Divide the polynomial p(x) by the polynomial g(x) and find the quotient and reminder in each of the following.

(i) $p(x) = x^3 - 3x^2 + 5x - 3, g(x) = x^2 - 2$

Watch Video Solution

77. Divide the polynomial p(x) by the polynomial g(x) and find the quotient and

reminder in each of the following.

(ii)

$p(x) = x^4 - 3x^2 + 4x + 5, g(x) = x^2 + 1 - x$

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78. Divide the polynomial p(x) by the polynomial g(x) and find the quotient and reminder in each of the following.

(i) $p(x) = x^3 - 3x^2 + 5x - 3, g(x) = x^2 - 2$

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79. Check in which case the first polynomial is a factor of the second polynomial by dividing the second polynomial by the first polynomial :

$t^2 - 3, 2t^4 + 3t^3 - 2t^2 - 9t - 12$

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80. Check in which case the first polynomial is a factor of the second polynomial by dividing the second polynomial by the first polynomial :

$x^2 + 3x + 1, 3x^4 + 5x^3 - 7x^2 + 2x + 2$

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81. Check in which case the first polynomial is a factor of the second polynomial by dividing the second polynomial by the first polynomial :

$x^3 - 3x + 1, x^5 - 4x^3 + x^2 + 3x + 1$

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82. Obtain all other zeroes of $3x^4 + 6x^3 - 2x^2 - 10x - 5$, if two of its zeroes are $\sqrt{\frac{5}{3}}$ and $-\sqrt{\frac{5}{3}}$.

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83. On dividing $x^3 - 3x^2 + x + 2$ by a polynomial $g(x)$ the quotient and remainder were $x - 2$ and $-2x + 4$, respectively. Find $g(x)$.

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84. Give example of polynomials p(x), g(x), q(x) and r(x), which satisfy the division algorithm and

(i) deg p(x) = deg q(x).

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85. Give example of polynomials p(x), g(x), q(x) and r(x), which satisfy the division algorithm and

(i) deg p(x) = deg q(x).

Watch Video Solution

86. Give example of polynomials p(x), g(x), q(x) and r(x), which satisfy the division algorithm and

(iii) deg r(x) = 0.

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87. Verify that the numbers given along side the cubic polynomials below are their zeroes. Also verify the relationship between the zeroes and the coefficients in each case.

(i) $2x^3 + x^2 - 5x + 2, \left(\frac{1}{2}, 1, -2\right)$

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88. Verify that the numbers given along side the cubic polynomials below are their zeroes. Also verify the relationship between the zeroes and the coefficients in each case.

(i) $2x^3 + x^2 - 5x + 2, \left(\frac{1}{2}, 1, -2\right)$

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89. Find a cubic polynomial with the sum, sum of the product of its zeroes taken two at a time, and the product of its zeroes as 2, -7, -14 respectively.

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90. It the zeroes of the polynomial $x^3 - 3x^2 + x + 1$ are $a - b, a, a + b$ find a and b.

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

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92. If the polynomial $x^4 - 6x^3 - 16x^2 + 25x + 10$ is divided by another polynomial $x^2 - 2x + k$, the remainder comes out to be $x + a$, find k and a.

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93. Find the quotient $\dfrac{x^5+x^4+x^3+x^2}{x^3+x^2+x+1}$

When $x \neq 1$.

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94. We can write a trinomial having degree 7^{th}.

Justify the given statement by giving one example.

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95. For what value of k, -4 is a zero of the polynomial $x^2 - x - (2k+2)$.

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96. Write an example for a quadratic polynomial which has no zeroes.

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97. If $p(x) = x^3 - 3x^2 + 2x - 3$ is a polynomial, then find the value of p(1).

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98. Srikar says that the order of the polynomial $(x^2 - 5)(x^3 + 1)$ is 6. do you agree with him ? How?

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99. Find the zeroes of the polynomial

$p(x) = x^2 - 4.$

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100. Verify the relation between zeroes and coefficients of the Quadratic polynomial

$x^2 - 4.$

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101. If P(x)=x^4+1, then find P(2)-P(-2).

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102. Verify whether 2 and 1 are zeros of the polynomial x^2-3x+2 or not ?

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103. -3, 0 and 2 are the zeroes of the polynomial $p(x)=x^3+(a-1)x^2+bx+c$, find a and c.

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104. Write any two linear polynomials having one term and three terms.

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105. If we multiply or divide both sides of a linear equation by a zero number, then the roots of linear equation will remain the same. Is it true? If so justify with an example.

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106. The length of a rectangle is 5 more than its breadth, so express its perimeter in the form of polynomial.

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107. Show that 2 and $-\frac{1}{3}$ are zeroes of the polynomial $3x^2 - 5x - 2$.

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108. Which of $\sqrt{2}$ and 2 is a zero of the polynomial $p(x) = x^3 - 2x$? Why?

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109. Divide $x^3 - 3x^2 + 5x - 3$ by $x^2 - 2$ and verify the divison lemma.

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110. $x^3 - 4x^2 + 5x - 2$ ను x-2 చే భాగించండి.

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111. If one of the zeroes of the quadratic polynomial $ax^2 + bx + c$ is 0, then the other zero is

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112. Laxmi does not want to disclose the l, b,h of a cuboid of her project. She has constructed a polynomial $x^3 - 6x^2 + 11x - 6$ by taking the value of l, b, h as its zeroes. Can you open the secret?

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113. Draw a graph for the polynomial $p(x) = x^2 + 3x - 4$ and find its zeros from the graph.

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114. Draw the graph of the polynomial $p(x) = 3x^2 + 2x - 1$ on the graph paper. Find its zeroes from the graph.

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115. Draw the graph of polynomial $p(x) = x^2 - 3x + 2$ and find the zeros from the graph.

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116. Draw the graph of the polynomial $p(x) = x^2 - 5x + 4$ on the graph paper. Find its zeroes from the graph.

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117. On dividing $x^3 - 3x^2 - 7$ by $x^2 - 2x + 4$, if the remainder is in the form of $Ax + B$, find the values of A and B.

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118. Divide $3x^4 - 5x^3 + 4x^2 + 3x - 5$ by $x^2 - 3$ and verify the division algorithm.

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119. Total number of pencils required are given by $4x^4 + 2x^3 - 2x^2 + 62x - 66$. If each box contains $x^2 + 2x - 3$ pencils, then find the number of boxes to be purchesed.

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120. Draw the graph of polynomial $p(x) = x^2 - 3x + 2$ and find the zeros from the graph.

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121. Draw the graph of the polynomial $p(x) = x^2 - 5x + 4$ on the graph paper. Find its zeroes from the graph.

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122. Find $p(3)$ if $p(x) = x^2 - 5x + 6$ is given.

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123. Find the zeroes of $x^2 + 8x + 15$.

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124. How do you say that the maximum number of zeroes of $x^2 + 8x + 15$ is 2 ?

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125. Find the zeroes of $x^2 + 8x + 15$.

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126. Check whether '6' becomes a zero of $x^2 + 8x + 15$ or not? Give reasons.

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127. 8 times of a number is added to its square give a result -15. then find the number by using its quadratic equation.

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128. In how many points will the graph of $x^2 + 8x + 15$ intersect X - axis? Why?

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129. Express the polynomial $x^2 + 8x + 15$ in view of variable 'y'.

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130. State the relation between coefficient of polynomial and zeroes of it.

Watch Video Solution

131. Find $p(3)$ if $p(x) = x^2 - 5x + 6$ is given.

Watch Video Solution

132. The quadratic polynomial having 2, 3, as zeroes is ....

A. $x^2 - 5x - 6$

B. $x^2 + 5x + 6$

C. $x^2 - 5x + 6$

D. $x^2 + 5x - 6$

133. Which of the following has only one zero?

A. $p(x) = 2x^2 - 3x + 4$

B. $p(x) = x^2 - 2x + 1$

C. $p(x) = 2x + 3$

D. $p(x) = 5$

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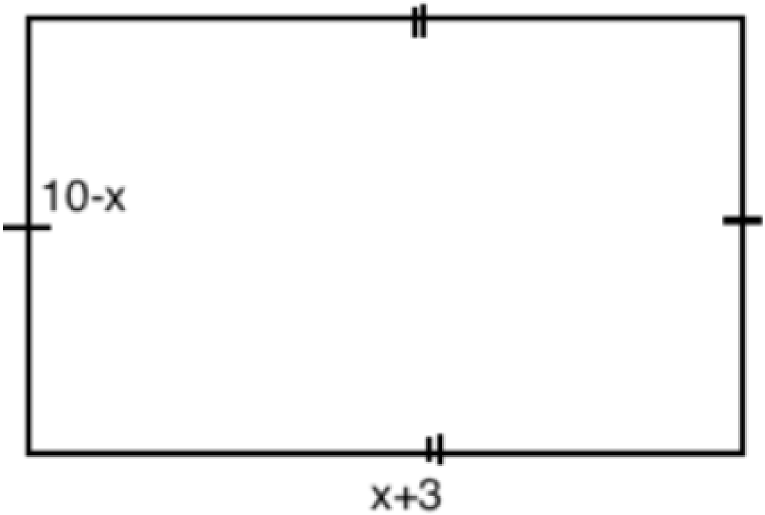
134. Observe the given rectangular figure, then its area in polynomial function is ....



A. $A(x) = x^2 + 7x + 30$

B. $A(x) = -x^2 + 7x + 30$

C. $A(x) = x^2 - 7x + 30$

D. $A(x) = -x^2 - 7x + 30$

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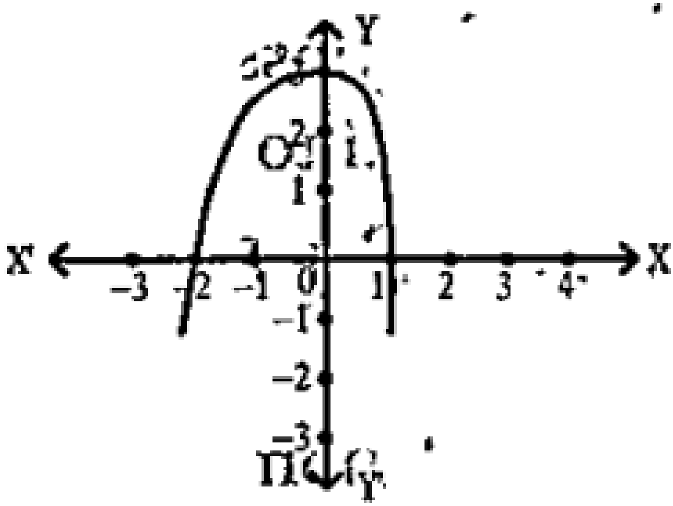
135. The following is the graph of a polynomial. Find the zeroes of the polynomial from the given graph.



A. $-2, 3$

B. $1, 3$

C. $-2, 1$

D. 3,0

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136. The coefficient of x^7 in the polynomial $7x^{17} - 17x^{11} + 27x^5 - 7$ is ....

A. -1

B. 0

C. 7

D. 17

Watch Video Solution

137. The quadratic polynomial having $\frac{1}{3}$ and $\frac{1}{2}$ as its zeroes, is.....

A. $x^2 + \frac{5x+1}{6}$

B. $-6x^2 - 5x + 1$

C. $x^2 - \frac{5x-1}{6}$

D. $6x^2 - 5x - 1$

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138. Sum of zeroes of a polynomial $x^3 - 2x^2 + 3x - 4$ is ....

A. -2

B. 2

C. 1

D. 4

Watch Video Solution

139. The value of x, which satisfies

$$2(x-1)-(1-x)=2x+3$$

A. 2

B. 4

C. 6

D. 8

Watch Video Solution

140. If the polynomial $p(x) = x^3 - x^2 + 3x + k$ is divided by $(x - 1)$, the remainder obtained is 3, then the value of k is

A. 0

B. 1

C. 3

D. -3

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141. In a division, if divisor is x+1 , quotient is x and remainder is 4, then dividend is

A. $x^2 + x$

B. $4(x+1) + x$

C. $x(x+1) + 4$

D. $4x + 4$

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142. If α, β are the zeroes of the polynomial $x^2 - x - 6$ then $\alpha^2\beta^2$= ....

A. 6

B. 9

C. 5

D. 4

Watch Video Solution

143. Let $p(x) = x^2 - 4x + 3$. Find the value of p(1) and obtain zeroes of the polynomial p(x).

A. -1

B. 0

C. 1

D. 2

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144. If the polynomial $p(x) = x^4 - 2x^3 + x^2 - 1$ is divided by $(x+1)$, then the degree of quotient polynomial.

A. 1

B. 3

C. 4

D. 2

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145. A quadratic polynomial whose zeroes are 5 and -2 is

A. $x^2 + 5x - 2$

B. $x^2 + 3x - 10$

C. $x^2 - 3x - 10$

D. $x^2 - 2x + 5$

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146. If $\sqrt{3}$ and $-\sqrt{3}$ are the zeroes of a polynominal p(x), then p(x) is

A. $x^2 - 9$

B. $3x^2 - 1$

C. $x^2 + 3$

D. $x^2 - 3$

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147. The quadratic polynomial whose zeroes are $\sqrt{15}$ and $-\sqrt{15}$ is

A. $x^2 - 15$

B. $x^2 - 225$

C. $15x^2 - 1$

D. $x^2 - \sqrt{15}$

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148. If one zero of the quadratic polynomial $2x^2 + kx - 15$ is 3, then the other zero is

A. $\frac{-15}{2}$

B. k

C. $-\frac{5}{2}$

D. -15

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149. The maximum number of zeroes that a polynomial of degree 3 can have is

A. Three

B. One

C. Two

D. None

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150. The product and sum of the zeroes of the quadratic polynomial $ax^2 + bx + c$ respectively are

A. $\frac{c}{b}$,1

B. $-\frac{b}{a}, \frac{c}{a}$

C. $\frac{c}{a}, \frac{b}{a}$

D. $\frac{c}{a}, -\frac{b}{a}$

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151. The zeroes of the polynomial $p(x) = 4x^2 - 12x + 9$ are

A. $-\frac{3}{2}, -\frac{3}{2}$

B. -3,-4

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

D. 3,4

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152. If α and β are zeroes of the polynomial $p(x) = x^2 - 5x + 6$, then the value of $\alpha + \beta - 3\alpha\beta$ is

A. -13

B. 6

C. 13

D. -5

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153. The graph of the polynomial $f(x) = 2x - 5$ is a straight line which intersects the X - axis at exactly one point namely.

A. $\left[0, -\frac{5}{2}\right]$

B. $\left[\frac{5}{2}, -\frac{5}{2}\right]$

C. $\left[\frac{5}{2}, 0\right]$

D. $\left[-\frac{5}{2}, 0\right]$

154. If 1 is the zero of the quadratic polynomial $x^2 + kx - 5$, then the value of k is

A. 0

B. 5

C. -4

D. 4

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155. If both the zeroes of a quadratic polynomial $ax^2 + bx + c$ are equal and opposite in sign, then b is

A. -1

B. 5

C. 1

D. 0

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156. Sum and product of the zeroes of polynomial $x^2 - 3$ are respectively.

A. 0,3

B. 0,-3

C. -3,0

D. 3,0

Watch Video Solution

157. If the zeroes of quadratic polynomial are equal in magnitude but opposite in sign, then

A. Product of its zeros is 0

B. Sum of its zeroes is 0

C. there are no zeros of the polynomial

D. One of the zero is zero

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158. If one of the zeroes of the quadratic polynomial $ax^2 + bx + c$ is 0, then the other zero is

A. $\frac{b}{a}$

B. $-\frac{c}{a}$

C. $-\frac{b}{a}$

D. 0

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159. The polynomial whose zero are -5 and 4 is

A. $x^2 + x - 20$

B. $x^2 + 5x - 4$

C. $x^2 - 9x - 20$

D. $x^2 - 5x + 4$

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160. If -1 is a zero of the polynomial $f(x) = x^2 - 7x - 8$, then the other zero is

A. 8

B. -8

C. 1

D. 6

Watch Video Solution

161. If one zero of the quadratic polynomial $x^2 - 5x - 6$ is 6, then the other zero is

A. 1

B. -5

C. -1

D. -6

Watch Video Solution

162. If α and β are the zeros of the polynomial $f(x)=x^2+px+q$, then a polynomial having $\frac{1}{\alpha}$ and $\frac{1}{\beta}$ as its zeros is ....

A. qx^2+px+1

B. $qx^2+px+10$

C. px^2+qx+1

D. None

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163. If the roots $ax^2 + bx + c = 0$ are both negative and $b < 0$, then

A. C=0

B. $c < 9$

C. $c < 0$

D. $C > 0$

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164. If α, β, γ are the zeros of the polynomial $f(x) = ax^3 + bx^2 + cx + d$ then $\frac{1}{\alpha} + \frac{1}{\beta} + \frac{1}{\gamma}$ = ...

A. $\frac{1}{d}$

B. $\frac{1}{c}$

C. $\frac{c}{d}$

D. $-\frac{c}{d}$

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165. If the product of the zeros of the polynomial f(x)= $ax^3 - 6x^2 + 11x - 6$ is 4, then a = ...

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

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

C. -1

D. 9

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166. If α, β are the zeros of the polynomial $f(x) = ax^2 + bx + c$ then $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$ = ...

A. 7

B. 9

C. 1

D. -1

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167. If one zero of the polynomial $f(x) = 5x^2 + 13x + k$ is reciprocal of the other , then the value of k= ....

A. 5

B. -5

C. 1

D. None

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168. If α, β are the zeros of polynomial $f(x) = x^2 - p(x+1) - c$ then $(\alpha+1)(\beta+1)$ = ...

A. a

B. 1+c

C. 1-c

D. C

Watch Video Solution

169. If the sum of the zeros of the polynomial $f(x) = 2x^3 - 3kx^2 + 4x - 5$ is 6 then k = ...

A. -1

B. 9

C. 0

D. 4

Watch Video Solution

170. If α, β, γ are the zeros of the polynomial $f(x) = ax^3 + bx^2 + cx + d$ then $(\alpha)^2 + (\beta)^2 + (\gamma)^2$ = ...

A. $\dfrac{b^2 + 4ac}{2}$

B. $\dfrac{b^2 - 2ac}{a^2}$

C. $\dfrac{b + 2ac}{a^2}$

D. None

Watch Video Solution

171. If the polynomial $f(x) = ax^3 + bx - c$ is divisible by the polynomial $g(x) = x^2 + bx + c$ then ab = ...

A. 1

B. 7

C. -1

D. 0

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172. The product of the zeros of $x^3 + 4x^2 + x - 6$ is ....

A. 8

B. 7

C. 6

D. -6

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173. A quadratic polynomial , the sum of whose zeroes of 0 and one zero is 3 is ....

A. $x^2 + 3$

B. x-3

C. $x^2 - 9$

D. $x^2 - 3$

Watch Video Solution

174. If $\sqrt{5}$ and $-\sqrt{5}$ are two zeros of the polynomial $x^3 + 3x^2 - 5x - 15$ then its third zero is ....

A. 7

B. 3

C. -3

D. None

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175. If α, β, γ are the zeros of the polynomial $x^3 - px^2 + qx - r$ then $\frac{1}{\alpha\beta} + \frac{1}{\beta\gamma} + \frac{1}{\gamma\alpha}$ =

....

A. $\frac{r}{p}$

B. $\frac{p}{r}$

C. -r

D. None

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176. If $x + 2$ is a factor of $x^2 + ax + 2b$ and $a + b = 4$ then a = ...

A. 3

B. 2

C. -1

D. 4

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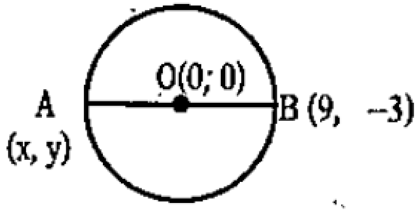
In the below figure x = ... |

A) 1

B) – 7

C) 3

D) – 9



177.

In the above problem y = ...

A. 9

B. 0

C. -1

D. 1

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178. If one zero of the polynomial $f(x) = (k^2 + 4)x^2 + 13x + 4k$ is reciprocal of the other then k = ...

A. -2

B. 2

C. 9

D. 1

Watch Video Solution

179. If two zeros of $x^3 + x^2 - 5x - 5$ are $\sqrt{5}$ and $-\sqrt{5}$ then its third zero is ....

A. -3

B. 2

C. -1

D. None

Watch Video Solution

180. If zeros of polynomial $f(x0 = x^3 - 3px^2 + qx - r$ are in AP then $2p^3$ = ...

A. Pq-r

B. p-r

C. Pq+1

D. P+q-r

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181. If α, β are the zeros of the polynomial $f(x) = ax^2 + bx + c$ then $\dfrac{1}{\alpha^2} + \dfrac{1}{\beta^2}$ = ...

A. $b^2 - 2ac$

B. $\dfrac{b + 4ac}{c}$

C. $\dfrac{b - 4ac}{c^2}$

D. $\dfrac{b^2 - 2ac}{c^2}$

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182. What should be subtracted from the polynomial $x^2 - 16x + 30$ so that 15 is the zero of the resulting polynomial?

A. 15

B. -1

C. -15

D. None

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183. $ax+b$ represents .... polynomial.

A. Quadratic

B. Cubic

C. Linear

D. None

Watch Video Solution

184. ax^2+bx+c is a .... polynomial.

A. Quadratic

B. Linear

C. Cubic

D. Fourth

Watch Video Solution

185. Which of the following is a cubic polynomial in general form?

A. $bx^2 + c^3x + x + 1$

B. `ax^3+bx^2+CX+d

C. $x^2 + 2^3$

D. None

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186. The degree of the polynomial $ax^4 + bx^3 + cx^2 + dx + e$ is ....

A. 5

B. 4

C. 6

D. 0

Watch Video Solution

187.

$a_0x^n + a_1x^{n-1} + a_2x^{n-2} + \ldots\ldots\ldots a_nx^n$ is polynomial of degree ....

A. 1

B. n-2

C. n.

D. n^2

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188. If α, β, γ are roots of a cubic polynomial

$\alpha + \beta + \gamma$ = ...

A. $\frac{c}{a}$

B. $\frac{b}{a}$

C. $\frac{-b}{a}$

D. None

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189. If α, β, γ are roots of a cubic polynomial then $\alpha\beta + \beta\gamma + \gamma\alpha$ = ...

A. $-\frac{c}{a}$

B. $\frac{c}{a}$

C. $\frac{a}{c}$

D. $\frac{1}{c}$

Watch Video Solution

190. If α, β, γ are roots of a cubic polynomial then $\alpha\beta + \beta\gamma + \gamma\alpha$ = ...

A. $\frac{c}{a}$

B. $\frac{d}{a}$

C. $\frac{-d}{a}$

D. None

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191. $f(x) = 3x - 2$ then zero of f(x) is ....

A. $\frac{1}{2}$

B. $\frac{1}{3}$

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

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

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192. $p(t) = t^3 - 1, p(-2)$ = ...

A. -9

B. -4

C. 1

D. 0

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193. $p(x) = x^2 + 5x + 6$ then zeros of p(x) =

....

A. -2,-3

B. 3,-2

C. 4,1

D. 1,8

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194. $p(x) = 4x^2 + 3x - 1$ then $p\left(\frac{1}{4}\right)$ = ...

A. 1

B. 0

C. -1

D. 12

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195. $x^2 + 7x + 10$ బహుపది యొక్క శూన్యల మొత్తం

A. $(x+3)^2$

B. $(x+2)^2$

C. (x-2)(x-3)

D. (X+2)(x+5)

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196. $p(x) = x^3 + 4x^2 + 5x - 2$ then p(1) = ...

A. 8

B. 7

C. 3

D. None

Watch Video Solution

197. $p(x) = 3x^3 - 2x^2 + 6x - 5$ then p(2) = ...

A. 19

B. 10

C. 12

D. 23

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198. If m and n zeros of the polynomial $3x^2 + 11x - 4$ then the value of $\frac{m}{n} + \frac{n}{m}$ = ...

A. $\frac{4}{11}$

B. $\frac{4}{7}$

C. $\frac{11}{4}$

D. None

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199. Sum of the zeros of $x^2 + 7x + 10$ is

....

A. 7

B. -3

C. 4

D. None

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200. The quadratic polynomial, whose sum and product of zeros are 1 and -2 respectively is ....

A. $x^2 + x + 2$

B. $x^2 - x - 2$

C. $x^2 + 3x - 1$

D. $x^2 - 3x - 2$

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201. If p and q are the zeros of the polynomial $t^2 - 4t + 3$ then $\frac{1}{p} + \frac{1}{q} - 2pq + \frac{14}{3} = \ldots\ldots\ldots\ldots$

A. 0

B. -1

C. 2

D. 3

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202. A polynomial of degree 3 is called .... Polynomial.

A. Zero

B. Order

C. Quadratic

D. Cubic

Watch Video Solution

203. The quotient when $x^4 + x^3 + x^2 - 2x - 3$ is divided by $x^2 - 2$ is ....

A. $x^2 + x + 3$

B. x-2

C. $x^2 + 3x + 1$

D. None

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204. The quotient when $x^4 + x^3 + x^2 - 2x - 3$ is divided by $x^2 - 2$ is ....

A. -1

B. 4

C. 3

D. -3

Watch Video Solution

205. One zero of the polynomial $2x^2 + 3x + k is \frac{1}{2}$ then k = ...

A. 4

B. 1

C. 2

D. -2

Watch Video Solution

206. One zero of the polynomial $2x^2 + 3x + kis\frac{1}{2}$ then k = ...

A. -2

B. 2

C. 3

D. 4

Watch Video Solution

207. Sum of the zeros of $6x^2 = 1$ is ....

A. 3

B. 2

C. 0

D. -1

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208. What must be subtracted or added to $p(x) = 8x^4 + 14x^3 - 2x^2 + 8x - 12$ so that $4x^2 + 3x - 2$ is a factor of p(x)?

A. 5x-3

B. 15x-1

C. 5x-2

D. 15x-14

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209. The quadratic polynomial whose zeroes are $4+\sqrt{5}$ and $4-\sqrt{5}$ is ....

A. $x^2-8x+11$

B. $x^2-11x+1$

C. x^2+8x+3

D. None

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210. If one of the zeros of the quadratic polynomial $f(x) = 14x^2 - 42k^2x - 9$ is negative of the other then k = ...

A. 3

B. -1

C. 0

D. None

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211. If one zero of a polynomial $3x^2 - 8x + 2k + 1 = 0$ is seven times the other then k = ...

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

B. $\frac{1}{3}$

C. 1

D. None

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212. If $2x + 3$ is a factor of $2x^3 - x - b + 9x^2$ then the value of b is ....

A. 3

B. 7

C. 10

D. -15

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213. Divide $\left(x^3 - 6x^2 + 11x - 12\right)$ by $\left(x^2 - x + 2\right)$ then quotient is ....

A. x+5

B. X-5

C. x+1

D. None

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214. Divide $(x^3 - 6x^2 + 11x - 12)$ by $(x^2 - x + 2)$ then quotient is ....

In the above problem the remainder is

A. 2^{x-1}

B. X+1

C. 4x-2

D. None

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215. If α and β are the zeros of the polynomial $p(x) = 2x^2 + 5x + k$ satishfying the relation $\alpha^2 + \beta^2 + \alpha\beta = \frac{21}{4}$ then k = ...

A. 1

B. $\frac{2}{7}$

C. 2

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

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216.

$$\left(x-\sqrt{\frac{5}{3}}\right)\left(x+\sqrt{\frac{5}{3}}\right)=\ldots\ldots\ldots\ldots\ldots$$

A. $x-\dfrac{5}{3}$

B. $x^2-\dfrac{5}{3}$

C. $x^2-\dfrac{3}{5}$

D. x^2-1

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217. Product of zeros of $3x^2=1$ is ....

A. -1

B. -2

C. 3

D. $-\frac{1}{3}$

Watch Video Solution

218. Degree of '1' is ....

A. 1

B. 3

C. 0

D. 7

Watch Video Solution

219. Degree of $5x^7 - 6x^5 + 7x + 1$ is ....

A. 4

B. 1

C. 7

D. 3

Watch Video Solution

220. $(3x - 4)(x + 1)$=

A. $x^2 - 3x + 1$

B. $x^2 - x + 4$

C. $x^2 - 3x + 7$

D. $3x^2 - x - 4$

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221. $(x^2 - 3x - 28) \div (x + 4)$ = ...

A. x-7

B. X+7

C. x+3

D. X-1

Watch Video Solution

222. $f(x) = 4x^2 + 4x - 3$ then $f\left(\frac{-3}{2}\right)$ =

....

A. 0

B. -1

C. 1

D. 7

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223. In the above problem If reminder is $f(x)$ then $f\left(\frac{1}{2}\right)$=......

A. 1

B. 7

C. 9

D. 0

Watch Video Solution

224. $\left(x+\sqrt{5}\right)\left(x-3\sqrt{5}\right)=$

A. $x^2-2\sqrt{5}x+15$

B. $x^2-2\sqrt{5}x-15$

C. $x^2-2\sqrt{5}x+15$

D. None

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225.

$\left(-x^3+3x^2-3x+5\right) \div \left(-x^2+x-1\right)$ =

....

A. x+2

B. X-2

C. x-1

D. X+3

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226. The remainder when $3x^3 + x^2 + 2x + 5$ is divided by $x^2 + 2x + 1$ is ....

A. 9x+10

B. X+10

C. x-1

D. 9x-1

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227. $\alpha = a - b, \beta = a + b$ then the quadratic polynomial is ....

A. $x^3 - a^2x + b^2$

B. $x^2 - a^3x + a^2$

C. $x^2 - ax + a^2 + b^2$

D. `x^2-2ax+a^2-b^2

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228. If the product of zeros of $9x^2 + 3x + p$ is 7 then p ....

A. 14

B. -63

C. 63

D. 70

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229. Degree of $(x - 2)(x - 3)$ is ....

A. 3

B. 2

C. 1

D. 7

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230. The value of $x^{15} - 1$ at x = 0 is ....

A. 3

B. 9

C. 7

D. -1

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231. Zeros of the polynomial $x^2 - 4x + 3$ and 1 and p the p = ...

A. 7

B. 3

C. 1

D. None

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232. Degree of a linear polynomial is ....

A. 2

B. 3

C. 7

D. 1

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233. $(a+1)^2$= ....

A. a^2+1

B. a^2+2+a

C. a^2+2a+1

D. None

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234. $\alpha+\beta=0, \alpha\beta=\sqrt{3}$ then the quadratic polynomial is ....

A. x^2+1

B. $x+\sqrt{3}$

C. x-3

D. $x^2+\sqrt{3}$

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235. $(x^3 - 8) \div x^2 + 2x + 4$

A. x

B. X-1

C. x-2

D. None

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236. $p(x) = \frac{x+1}{1-x}$ then P(0) = ...

A. 1

B. -1

C. 2

D. 3

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237. $\left(x - \sqrt{3}\right)\left(x + \sqrt{3}\right)$ = ...

A. x+3

B. $x^2 - 3$

C. x+7

D. None

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238. If one zero of the polynomial is $\sqrt{2}-1$ then other zero may be ....

A. $1+\sqrt{3}$

B. $\sqrt{2}+1$

C. $\sqrt{2}-2$

D. All

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239. Biogas contains

A. 5

B. 4

C. 1

D. 2

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240. $p(x) = \frac{12}{x-3}$, $p(3)$ = ...

A. 1

B. 12

C. 0

D. Not defined

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241. $p(x) = x^2 - x + k, p(1) = -1$ then k = ...

A. -1

B. 1

C. 0

D. 7

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242. $p(-3)=0$ then p(x) = ...

A. x-7

B. X+1

C. x-4

D. X+3

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243. Number of constant terms in the polynomial $x^2 + 7x - 7$ is ....

A. 2

B. 1

C. 3

D. 2

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244. In the product $(x+4)(x+2)$ the constant term is ....

A. 7

B. -3

C. 6

D. 8

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