



MATHS

BOOKS - MBD NCERT SOLUTIONS

POLYNOMIALS

Multiple Choice Questions

1. Which one is polynomial ?

A. $\frac{1}{x + 1}$

B. $\sqrt{x} + 2$

C. $\frac{1}{x^2 + 2x + 7}$

D. $x^3 + 1$

Answer: D



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2. Which one is polynomial?

A. $\frac{1}{x + 1}$

B. $x^{\frac{1}{3}} + 2$

C. $\frac{1}{x^2 + 1}$

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

Answer: D



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3. Which one is polynomial?

A. $\sqrt{x} + 1$

B. $\frac{x}{x^3 + 1}$

C. $\frac{1}{x^2 + 1}$

D. $x^3 + 1$

Answer: D



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4. Which one is polynomial?

A. $1 + \sqrt{x}$

B. $x^2 + 1$

C. $\frac{1}{x^3 + x^2 + 1}$

D. $\frac{1}{x^3}$.

Answer: B



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5. Find the zeros of polynomial $6x^2 - 3 - 7x$ and verify the relationship between the zeros and their coefficients:

A. $\frac{-1}{3}, \frac{3}{2}$

B. $\frac{-7}{3}, \frac{-3}{6}$

C. $\frac{7}{6}, \frac{-3}{6}$

D. None of these.

Answer: A



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

$$4x^2 - 4x + 1$$

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

B. $\frac{-1}{2}, \frac{-1}{2}$

C. $1, \frac{1}{4}$

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

Answer: A



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7. The zeroes of $3x^2 - 4 - x$ are :

A. $1, \frac{-4}{3}$

B. $-1, \frac{4}{3}$

C. $-1, \frac{-4}{3}$

D. $1, \frac{4}{3}$.

Answer: B



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8. The zeroes of $3x^2 + 1 - 4x$ are :

A. $1, \frac{1}{3}$

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

C. $-1, \frac{1}{3}$

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

Answer: A



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9. The polynomial $p(x) = ax^2 + bx + c$ can have at most zeros, where $a \neq 0$:

A. One

B. Two

C. Three

D. None of these.

Answer: B



10. The sum of the zeroes of the polynomial

$$2x^2 - 8x + 6 \text{ is}$$

A. 3

B. -4

C. 4

D. -3 .

Answer: C



11. Which of the following expression is a quadratic polynomial?

A. $2x + 3$

B. $3x^2 - 5x + 4$

C. $\frac{1}{2x^2 + 3x + 5}$

D. None of these.

Answer: B



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12. The zeroes of the polynomial $x^2 - 7$ are :

A. $\sqrt{7}, \sqrt{7}$

B. $7, -7$

C. $\sqrt{7}, -\sqrt{7}$

D. None of these.

Answer: C



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13. Find the zeros of the polynomial $f(x) = x^2 - 2$ and verify the relationship between its zeros and coefficients.

A. ± 3

B. $\pm \sqrt{3}$

C. ± 2

D. $\pm \sqrt{2}$

Answer: B



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14. If the sum and product of zeroes of the polynomial are 7 and -5 respectively, the quadratic polynomial is :

A. $x^2 - 7x - 5$

B. $x^2 + 7x - 5$

C. $x^2 - 7x + 5$

D. $x^2 + 7x + 5$.

Answer: A



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15. Which of the following expression is not a polynomial?

A. $\frac{1}{x + 1}$

B. $x^2 + 1$

C. $4m^2 + 9m + 1$

D. $5y^2 - 6$.

Answer: A



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16. How many (i) maximum (ii) minimum number of zeroes can a quadratic polynomial have ?

A. 1

B. 2

C. 3

D. 4

Answer: B



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17. If α and β are the zeros of the quadratic polynomial $p(t) = t^2 - 5t - 1$, find the value of $\frac{\alpha^2}{\beta^2} + \frac{\beta^2}{\alpha^2} + 2\left(\frac{\alpha}{\beta} + \frac{\beta}{\alpha}\right) - \alpha\beta$.

A. 1

B. 5

C. -5

D. -1

Answer: A



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18. The sum of zeroes of quadratic polynomial is $-\sqrt{2}$ and product is 7, that quadratic polynomial is :

A. $x^2 - \sqrt{2}x + 7$

B. $x^2 + \sqrt{2}x + 7$

C. $x^2 - \sqrt{2}x - 7$

D. $x^2 + \sqrt{2}x - 7$

Answer: B



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Very Short Answer Type Questions

1. Find the sum of zeroes of quadratic polynomial $x^2 + 7x + 10$.



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2. Find the product of zeroes of quadratic polynomial $x^2 + 7x + 10$.



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3. 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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4. Find the product of zeroes of the quadratic polynomial $x^2 - 2x - 8$.



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Short Answer Type Questions

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

$$x^2 - 2x - 8$$



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2. Find the zeroes of the polynomial:

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



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3. Find a quadratic polynomial with numbers $\frac{1}{4}$ and -1 as the sum and product of its zeroes respectively.



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4. Find a quadratic polynomial with the given number as the sum and product of its zeroes respectively are $\frac{1}{4}$ and 4.



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5. Find a quadratic polynomial with the given number as the sum and product of its zeroes respectively are 3 and 2.



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6. Find a quadratic polynomial with the given number as the sum and product of its zeroes respectively are 5 and 3.



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7. Find a quadratic polynomial whose zeroes are -4 and 2 respectively.



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8. Find a quadratic polynomial whose zeroes are -3 and 5 .



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9. Find a quadratic polynomial whose zeroes are 4 and -1 .



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10. Find a quadratic polynomial whose zeroes are 3 and -2 .



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11. Check whether the polynomial

$f(x) = x^2 - 3$ is a factor of the polynomial

$g(x)$ where

$$g(x) = 2x^4 + 3x^3 - 2x^2 - 9x - 12.$$



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12. Apply the division algorithm to find the

quotient and remainder on dividing

$$f(x) = x^3 - 3x^2 + 5x - 3 \text{ by } g(x) = x^2 - 2$$



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13. Apply the division algorithm to find the quotient and remainder on dividing

$$f(x) = x^4 - 3x^2 + 4x + 5 \quad \text{by}$$

$$g(x) = x^2 + 1 - x$$



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14. Divide the polynomial

$$p(x) = x^4 - 3x^2 + 4x + 5 \text{ by the polynomial}$$

$$g(x) = x^2 - x + 1 \text{ and find quotient and}$$

remainder.



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15. Find all the zeros of the polynomial $f(x) = 2x^4 - 3x^3 - 3x^2 + 6x - 2$, if two of its zeros are $\sqrt{2}$ and $-\sqrt{2}$.



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16. 13. find all 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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