



MATHS

BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

POLYNOMIALS

Example

1. Find the zeros of the quadratic polynomials and verify the relationship between the zeros

and coefficients.

$$7x^2 + 21x - 70$$



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

$$8x^2 - 24x + 18$$



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3. Find a quadratic polynomial whose

Zeros are $\frac{1}{2}$ and $-\frac{1}{4}$



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4. Find a quadratic polynomial whose

Sum of zeros is $\frac{7}{3}$ and the product is $\frac{2}{3}$



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5. Find a quadratic polynomial whose

Zero is $\sqrt{5}$ and only $\sqrt{5}$



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6. If α and β are the zeros of the polynomial

$ax^2 + bx + c$. Find the value of

$$\alpha^2 + \beta^2$$



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7. If α and β are the zeros of the polynomial

$ax^2 + bx + c$. Find the value of

$$\alpha^2 + \beta^2 + \alpha\beta$$



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8. If α and β are the zeros of the polynomial

$ax^2 + bx + c$. Find the value of

$$\alpha - \beta$$



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9. If α and β are the zeros of the polynomial

$ax^2 + bx + c$. Find the value of

$$\alpha^3 + \beta^3$$



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10. If α and β are the zeros of the polynomial

$ax^2 + bx + c$.

If one of the zero of the polynomial is double

the other, prove that $2b^2 = 9ac$



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11. Given that 2 is a zero of the polynomial $p(x) = 3x^3 - 9x^2 - 30x + 72$. Find the other zeros.



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12. If $7 - \sqrt{5}$ is a zero of the polynomial $p(x) = x^3 + bx^2 + 100x + c$, then find b and c , where b and c are rational numbers.



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Exercise

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

$$3x^2 - x - 4$$



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2. Find the zeroes of the quadratic polynomials and verify the relationship

between the zeroes and the coefficients.

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



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

$$2x^2 - (1 + 2\sqrt{2})x + \sqrt{2}$$



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

$$4\sqrt{5}x^2 - 17x + 3\sqrt{5}$$



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

$$x^2 - (2a + b)x + 2ab$$





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

$$abx^2 + (ac + bd)x + cd$$



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7. Find a quadratic polynomials whose zeroes are.

-5, 4



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8. Find a quadratic polynomials whose zeroes are.

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



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9. Find a quadratic polynomials whose zeroes are.

$a + \sqrt{b}, a - \sqrt{b}$



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10. Find the quadratic polynomial whose sum of zeroes and product of zeroes are given respectively as

$-1/4, 1/4$



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11. Find the quadratic polynomial whose sum of zeroes and product of zeroes are given

respectively as

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



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12. Find the quadratic polynomial whose sum of zeroes and product of zeroes are given respectively as

$$8, 12$$



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13. Find a quadratic polynomial whose zero is $\sqrt{3}$ and only $\sqrt{3}$



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14. Find a quadratic polynomial whose zero is $\sqrt{7}$ and only $\sqrt{7}$



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15. If α and β are the zeroes of the polynomial

$ax^2 + bx + c$, find the values of

' $1/\alpha + 1/\beta$ '



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16. If α and β are the zeroes of the polynomial

$ax^2 + bx + c$, find the values of

$\alpha^2 + \beta^2$



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17. If α and β are the zeroes of the polynomial

$ax^2 + bx + c$, find the values of

$$\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$$



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18. If α and β are the zeroes of the polynomial

$ax^2 + bx + c$, find the values of α^2/β

+ β^2/α



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19. If one zero of the polynomial $(a^2 + 9)x^2 + 13x + 6a$ is reciprocal of the other, find the value of a .



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20. If the product of zeroes of the polynomial $ax^2 - 6x - 6$ is 4 find the value of a .



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21. If the sum of the zeroes of the quadratic polynomial $kx^2 + 2x + 3k$ is equal to their product find the value of k .



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22. If α and β are the zeroes of the quadratic polynomial $x^2 - p(x + 1) - c = 0$, show that $(\alpha + 1) \cdot (\beta + 1) = 1 - c$.



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23. If the squared difference of the zeroes of the quadratic polynomial $x^2 + ax + 45$ is equal to 144 find the value of a.



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24. If the sum of the square of the zeroes of the quadratic polynomial $x^2 - 14x + p$ is equal to 100, find the value of p.



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25. Given that 3 is a zero of the polynomial

$$p(x) = 2x^3 - 15x^2 + 37x - 30, \quad \text{find the}$$

other zeroes.



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26. Given that $\frac{1}{2}$ is a zero of the polynomial $p(x)$

$$= 2x^3 + x^2 - 5x + 2, \text{ find the other zeroes.}$$



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27. 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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28. If the zeroes of the polynomial $x^3 - 12x^2 + 39x - 28$ are $a - b$, a , $a + b$, find a and b .



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