



INDIAN SCHOOL AL WADI AL KABIR
Class X, Mathematics
POLYNOMIALS_DTQ WORKSHEET

Questions of 2 marks each

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| Q.1. | Find the zeroes of the polynomial $7y^2 - \frac{11}{3}y - \frac{2}{3}$. |
| Q.2. | Find a quadratic polynomial in x , whose one zero is 15 and sum of the zeroes is 42. |
| Q.3. | If p and q are zeroes of the polynomial $p(y) = 21y^2 - y - 2$, then find the value of $(1 - p).(1 - q)$. |
| Q.4. | If α and β are the zeroes of the polynomial $p(y) = y^2 - 5y + 3$, then find the value of $\alpha^4\beta^3 + \alpha^3\beta^4$. |

Questions of 3 marks each

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| Q.5. | If α and β are the zeroes of the quadratic polynomial $p(x) = x^2 - 4x + k$, such that $\alpha - \beta = 8$. Find the value of k. |
| Q.6. | Form a quadratic polynomial, one of whose zero is $2 + \sqrt{5}$ and the sum of zeroes is 4. |
| Q.7. | Find the quadratic polynomial whose zeroes are -3 and 5 . Verify the relationship between the coefficients and the zeroes of the polynomial. |
| Q.8. | If α and β are the zeroes of the polynomial $3x^2 - 17x + 24$, then find the value of $\alpha^2 + \beta^2$. |
| Q.9. | If α and β are the zeroes of the polynomial $8x^2 - 5x - 1$, then form a quadratic polynomial in x whose zeroes are $\frac{2}{\alpha}$ and $\frac{2}{\beta}$. |
| Q.10. | Obtain the zeroes of the polynomial $7x^2 + 18x - 9$. Hence, write a polynomial each of whose zeroes is twice the zeroes of given polynomial. |
| Q.11. | If one zero of the polynomial $ax^2 + bx + c$ is double of the other, then show that $2b^2 = 9ac$. |

Questions of 5 marks each

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| Q.12. | <p>(i) Zeroes of the quadratic polynomial $x^2 - 3x + 2$ are α and β. Construct a quadratic polynomial whose zeroes are $2\alpha + 1$ and $2\beta + 1$.</p> <p>(ii) Find the value of k such that the polynomial $x^2 - (k + 6)x + 2(2k - 1)$ has sum of its zeroes equal to half of their product.</p> | |
| Q.13. | <p>If α and β be the zeroes of polynomial $2x^2 + 11x + 5$, then find</p> <div style="display: flex; justify-content: space-between;"> (i) $\alpha^4 + \beta^4$ (ii) $\frac{1}{\alpha} + \frac{1}{\beta} - 2\alpha\beta$ (iii) $\alpha^4\beta^3 + \alpha^3\beta^4$ </div> | |

CASE STUDY QUESTION:

Pankaj's father gave him some money to buy avocado from the market at the rate of $p(y) = y^2 - 24y + 128$. If m and n be the zeroes of $p(y)$, then



Based on the above information, answer the following questions.

Q.14. Find the value of $p(2.4)$.

Q.15. If m and n are the zeroes of the given polynomial $p(y)$, then find the value of $m + n + mn$.

Q.16. If α and β are the zeroes of the polynomial $g(t) = t^2 + t - 2$, then find the value of $\frac{1}{\alpha} + \frac{1}{\beta} + \alpha - \beta$.

Q.17. If sum of zeroes of $q(x) = kx^2 + 2x + 3k$ is equal to their product, then find the value of $2k - \frac{3}{2}$.

ANSWERS

Q.1.	$\frac{2}{3}, \frac{-1}{7}$	Q.2.	$x^2 - 42x + 405$	Q.3.	$\frac{6}{7}$	Q.4.	135
Q.5.	-12	Q.6.	$x^2 - 4x - 1$	Q.7.	verification	Q.8.	145/9
Q.9.	$k(x^2 + 10x - 32)$	Q.10.	$7x^2 + 36x - 36$	Q.11.	verification	Q.12.	(i) $x^2 - 8x + 15$ (ii) 7
Q.13.	(i) 10001/16	Q.13.	(ii) -36/5	Q.13.	(iii) -1375/16	Q.14.	76.16
Q.15.	152	Q.16.	7/2 or -5/2	Q.17.	-17/6		
