

CLASS 10 · HOTS · OLYMPIAD PREPARATION · DPP SHEET

Chapter 2: HOTS: Polynomials (Class 10)

Daily practice problems: 8 questions with an answer key

Try every question on your own first. The answer key is on the last page.

1. If α and β are the zeroes of $x^2 - 7x + 10$, find $\alpha^2 + \beta^2$.
2. If α and β are the zeroes of $3x^2 - 5x - 2$, find $\frac{1}{\alpha} + \frac{1}{\beta}$.
3. Find k if one zero of $5x^2 - 12x + k$ is the reciprocal of the other.
4. If α and β are the zeroes of $x^2 - 6x + 8$, form a quadratic polynomial whose zeroes are 2α and 2β .
5. Find k if the sum of the zeroes of $kx^2 + 2x + 3k$ equals their product.
6. Find the zeroes of $x^3 - 6x^2 + 11x - 6$.
7. If α and β are the zeroes of $x^2 - 4x + 1$, find $\alpha^3 + \beta^3$.
8. Find the remainder when $x^3 + 2x^2 - x - 2$ is divided by $x + 2$.

Answer Key

1. 29.

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

3. $k = 5$.

4. $x^2 - 12x + 32$.

5. $k = -\frac{2}{3}$.

6. 1, 2 and 3.

7. 52.

8. 0 (so $x + 2$ is a factor).

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