

CLASS 9 · HOTS · OLYMPIAD PREPARATION · DPP SHEET

Chapter 4: HOTS: Algebraic Identities (Class 9)

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 $a + b = 8$ and $ab = 15$, find $a^2 + b^2$ and $a^3 + b^3$.
2. Using an identity, find the value of 98^3 .
3. Factorise $27a^3 - 8b^3$.
4. If $x - \frac{1}{x} = 2$, find $x^2 + \frac{1}{x^2}$ and $x^3 - \frac{1}{x^3}$.
5. If $a + b + c = 10$ and $ab + bc + ca = 31$, find $a^2 + b^2 + c^2$.
6. Verify that $a^3 + b^3 + c^3 = 3abc$ for $a = 2, b = 3, c = -5$.
7. Evaluate 104×96 using an identity.
8. Expand $(2x - 3y)^2$.

Answer Key

1. 34 and 152.
2. 941 192.
3. $(3a - 2b)(9a^2 + 6ab + 4b^2)$.
4. 6 and 14.
5. 38.
6. $a + b + c = 0$, and both sides equal -90 .
7. 9984.
8. $4x^2 - 12xy + 9y^2$.

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