Finding the Cube of a Two-Digit Number (Alternative Method)

A. Choose the correct answer:

1. Which formula is used for finding the cube of a two-digit number in alternative method

a) $(a + b)^2$ b) $(a – b)^3$

c) $(a + b)^3$ d) $(a – b)^2$

2. In the alternative method, a and b represent

a) Half of the number b) Tens place and ones place respectively

c) Hundreds place and tens place d) None of these

3. The cube of 11 using the alternative method is

a) 121 b) 331

c) 1331 d) 1111

4. In the expansion $(a + b)^3$, the second term is

a) a^3 b) $3a^2b$

c) $3ab^2$ d) b^3

5. In the formula $(a + b)^3$, how many terms are there

a) 2 b) 3

c) 4 d) 5

B. Write the Missing Terms to Complete the Sentences:

1. $(a + b)^3 = a^3 +$ _____ $+ 3ab^2 + b^3$.
2. In finding cube using alternative method, b stands for _____ digit of the number.
3. The term $3a^2b$ is obtained by squaring _____ and multiplying by b.
4. The cube of 10 using alternative method is _____.
5. The term b^3 means cube of _____.

C. Figure out the answers to these questions:

1. Find the cube of 13 using the alternative method.
2. Find the cube of 21 by applying $(a + b)^3$ formula.
3. Find the cube of 32 using the expansion formula.
4. Find the cube of 45 using alternative method step-by-step.
5. Explain why the alternative method is easier for calculating cubes of two-digit numbers.

D. Mark each sentence with a True (✔) or False (✗):

1. $(a + b)^3$ expansion has four terms. ____
2. $3ab^2$ means three times a times b squared. ____
3. In the alternative method, b is always greater than a. ____
4. $(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$. ____
5. Alternative method can be used only for perfect squares. ____

E. Challenge yourself with these questions:

1. Find the cube of 14 using alternative method.
2. Expand and simplify $(20 + 3)^3$.
3. Find $(30 + 2)^3$ using $(a + b)^3$ formula.
4. Write the general form of $(a + b)^3$ expansion.
5. Find the cube of 41 using the alternative method.