

Chapter 09

ALGEBRAIC EXPRESSION & IDENTITIES

Example- 6:

Simplify 76×24 by using identities.

Solution:

We have,

$$\frac{76 + 24}{2} = \frac{\cancel{100}}{\cancel{2}} = 50$$

So, we express 76 and 24 in terms of 50.

$$\begin{aligned} 76 \times 24 &= \left(50 + \underset{b}{26}\right) \left(50 - \underset{b}{26}\right) \\ &= (50)^2 - (26)^2 \quad (\because (a+b)(a-b) = a^2 - b^2) \\ &= 2,500 - 676 \end{aligned}$$

$$\therefore \boxed{76 \times 24 = 1824}$$