

Tender Heart High School, Sector 33B, Chd.

CLASS IX (Maths) ch-3 Expansions

Date 8.04.2024

Practice Questions - 1

Question 1: Using the standard formulae, expand each of the following:-

(i) $(2x + 7y)^2$ (ii) $\left(\frac{1}{2}x + \frac{2}{3}y\right)^2$ (iii) $(3x - 4y)^2$

(iv) $\left(\frac{3a}{2b} - \frac{2b}{3a}\right)^2$ (v) $(x + 2)^3$ (vi) $(2x - 1)^3$

(vii) $(5x - 3y)^3$ (viii) $\left(2x + \frac{1}{3y}\right)^3$ (ix) $\left(\frac{3}{2}y - 2x\right)^3$

(x) $(2x + 3y + 4z)^2$ (xi) $(x - 2y - z)^2$

Question 2: Simplify the following:- (using formulae)

(i) $(x - 2y)(x + 2y)$ (ii) $(x - 7)(x + 7)$

(iii) $\left(2a - \frac{3}{a}\right)\left(2a + \frac{3}{a}\right)$ (iv) $(a - b)(a + b)(a^2 + b^2)$

Question 3: Using standard formulae, evaluate:-

(i) $(108)^2$ (ii) $(10.7)^2$ (iii) $(1003)^2$

(iv) $(997)^2$ (v) $(9.8)^2$

Question 4: (i) If $a + b = 7$ and $ab = 10$, find $(a - b)$

(ii) If $x - y = 5$ and $xy = 24$, find $(x + y)$

(iii) If $(a + b + c) = 12$ and $ab + bc + ca = 22$, find $a^2 + b^2 + c^2$

Question 5: If $\left(x - \frac{1}{x}\right) = 4$, find the values of

(i) $x^2 + \frac{1}{x^2}$ (ii) $x^4 + \frac{1}{x^4}$

Question 6: If $a^2 + \frac{1}{a^2} = 14$, find the values of:-

(i) $a + \frac{1}{a}$ (ii) $a - \frac{1}{a}$ (iii) $a^2 - \frac{1}{a^2}$

Note: Do these practice questions in maths register.