

EXERCISE**Question 1**

$15x + 5$

Solution:-Simplifying we get $15x + 5 = 5(3x+1)$ **Question 2**

$a^3 - a^2 + a$

Solution:-Simplifying we get $a^3 - a^2 + a = a(a^2 - a + 1)$ **Question 3**

$3x^2 + 6x^3$

Solution:Simplifying we get $3x^2 + 6x^3 = 3x^2(1+2x)$ **Question 4**

$4a^2 - 8ab$

Solution

$4a^2 - 8ab = 4a(a-2b)$

Question 5

$2x^3b^2 - 4x^5b^4$

Solution:-Simplifying we get $2x^3b^2 - 4x^5b^4 = 2x^3b^2(1-2x^2b^2)$ **Question 6**

$15x^4y^3 - 20x^3y$

Solution:-

$15x^4y^3 - 20x^3y = 5x^3y(3xy^2 - 4)$

Question 7.

$a^3b - a^2b^2 - b^3$

Solution:-Simplifying we get $a^3b - a^2b^2 - b^3 = b(a^3 - a^2b - b^2)$ **Question 8.**

$6x^2y + 9xy^2 + 4y^3$

Solution:-Simplifying we get $6x^2y + 9xy^2 + 4y^3 = y(6x^2 + 9xy + 4y^2)$ **Question 9**

$17a^6b^8 - 34a^4b^6 + 51a^2b^4$

Solution:-

$17a^6b^8 - 34a^4b^6 + 51a^2b^4$

Simplifying we get $17a^2b^4 (a^4b^4 - 2a^2b^2 + 3)$

Question 10

$$3x^5y - 27x^4y^2 + 12x^3y^3$$

Solution:-

Simplifying we get

$$3x^5y - 27x^4y^2 + 12x^3y^3 = 3x^3y (x^2 - 9xy + 4y^2)$$

Question 11.

$$x^2(a - b) - y^2(a - b) + z^2(a - b)$$

Solution:-

$$x^2(a - b) - y^2(a - b) + z^2(a - b) = (a - b) (x^2 - y^2 + z^2)$$

Question 12.

$$(x + y) (a + b) + (x - y) (a + b)$$

Solution:-

$$\begin{aligned} (x + y) (a + b) + (x - y) (a + b) &= (a + b) (2x) \\ &= 2x(a + b) \end{aligned}$$

Question 13

$$2b(2a + b) - 3c(2a + b)$$

Solution:-

$$2b(2a + b) - 3c(2a + b) = (2a + b) (2b - 3c)$$

Question 14.

$$12abc - 6a^2b^2c^2 + 3a^3b^3c^3$$

Solution:-

$$12abc - 6a^2b^2c^2 + 3a^3b^3c^3 = 3abc(4 - 2abc + a^2b^2c^2)$$

Question 15.

$$4x(3x - 2y) - 2y(3x - 2y)$$

Solution:-

$$\begin{aligned} 4x(3x - 2y) - 2y(3x - 2y) &= (3x - 2y) (4x - 2y) \\ &= (3x - 2y) \times 2 (2x - y) \\ &= 2(3x - 2y) (2x - y) \end{aligned}$$