



Exercise 8B

Q1

Answer :

(i) $a+b$

Substituting $a = 2$ and $b = 3$ in the given expression:

$$2+3 = 5$$

(ii) $a^2 + ab$

Substituting $a = 2$ and $b = 3$ in the given expression:

$$\begin{aligned}(2)^2 + (2 \times 3) &= 4 + 6 \\ &= 10\end{aligned}$$

(iii) $ab - a^2$

Substituting $a = 2$ and $b = 3$ in the given expression:

$$\begin{aligned}(2 \times 3) - (2)^2 &= 6 - 4 \\ &= 2\end{aligned}$$

(iv) $2a-3b$

Substituting $a = 2$ and $b = 3$ in the given expression:

$$\begin{aligned}(2 \times 2) - (3 \times 3) &= 4 - 9 \\ &= -5\end{aligned}$$

(v) $5a^2 - 2ab$

Substituting $a=2$ and $b=3$ in the given expression:

$$\begin{aligned}5 \times (2)^2 - 2 \times 2 \times 3 &= 5 \times 4 - 12 = 20 - 12 \\ &= 8\end{aligned}$$

(vi) $a^3 - b^3$

Substituting $a=2$ and $b=3$ in the given expression:

$$2^3 - 3^3 = 2 \times 2 \times 2 - 3 \times 3 \times 3 = 8 - 27 \\ = -19$$

Q2

Answer :

(i) $3x-2y+4z$

Substituting $x = 1$, $y = 2$ and $z = 5$ in the given expression:

$$3 \times (1) - 2 \times (2) + 4 \times (5) = 3 - 4 + 20 \\ = 19$$

(ii) $x^2 + y^2 + z^2$

Substituting $x = 1$, $y = 2$ and $z = 5$ in the given expression:

$$1^2 + 2^2 + 5^2 = (1 \times 1) + (2 \times 2) + (5 \times 5) = 1 + 4 + 25 \\ = 30$$

(iii) $2x^2 - 3y^2 + z^2$

Substituting $x = 1$, $y = 2$ and $z = 5$ in the given expression:

$$2 \times (1)^2 - 3 \times (2)^2 + 5^2 = 2 \times (1 \times 1) - 3 \times (2 \times 2) + (5 \times 5) = 2 - 12 + 25 \\ = 15$$

(iv) $xy + yz - zx$

Substituting $x = 1$, $y = 2$ and $z = 5$ in the given expression:

$$(1 \times 2) + (2 \times 5) - (5 \times 1) = 2 + 10 - 5 \\ = 7$$

(v) $2x^2y - 5yz + xy^2$

Substituting $x = 1$, $y = 2$ and $z = 5$ in the given expression:

$$2 \times (1)^2 \times 2 - 5 \times 2 \times 5 + 1 \times (2)^2 = 4 - 50 + 4 \\ = -42$$

(vi) $x^3 - y^3 - z^3$

Substituting $x = 1$, $y = 2$ and $z = 5$ in the given expression:

$$1^3 - 2^3 - 5^3 = (1 \times 1 \times 1) - (2 \times 2 \times 2) - (5 \times 5 \times 5) = 1 - 8 - 125 \\ = -132$$

Q3

Answer :

(i) $p^2 + q^2 - r^2$

Substituting $p = -2$, $q = -1$ and $r = 3$ in the given expression:

$$(-2)^2 + (-1)^2 - (3)^2 = (-2 \times -2) + (-1 \times -1) - (3 \times 3) \\ \Rightarrow 4 + 1 - 9 = -4$$

(ii) $2p^2 - q^2 + 3r^2$

Substituting $p = -2$, $q = -1$ and $r = 3$ in the given expression:

$$2 \times (-2)^2 - (-1)^2 + 3 \times (3)^2 = 2 \times (-2 \times -2) - (-1 \times -1) + 3 \times (3 \times 3) \\ \Rightarrow 8 - 1 + 27 = 34$$

***** END *****