

13. Simplify combining like terms: $3a - 2b - ab - (a - b + ab) + 3ab + b - a$

Ans: $3a - 2b - ab - (a - b + ab) + 3ab + b - a$
 $= 3a - 2b - ab - a + b - ab + 3ab + b - a$
 $= 3a - a - a - 2b + b + b - ab - ab + 3ab$
 $= a(1 - 1 - 1) + b(-2 + 1 + 1) + ab(-1 - 1 + 3)$
 $= a(1 - 2) + b(-2 + 2) + ab(-2 + 3)$
 $= a(1) + b(0) + ab(1) = a + ab$

SECTION – D

Questions 14 to 17 carry 3 marks each.

14. What should be the value of a if the value of $2x^2 + x - a$ equals to 5, when $x = 0$?

Ans:

From the question, it is given that $x = 0$

We have, $2x^2 + x - a = 5 \Rightarrow a = 2x^2 + x - 5$

Then, substitute the value of x in the equation.

$a = (2 \times 0^2) + 0 - 5 \Rightarrow a = 0 + 0 - 5 \Rightarrow a = -5$

15. Identify terms which contain y^2 and give the coefficient of y^2 .

(i) $8 - xy^2$ (ii) $5y^2 + 7x$ (iii) $2x^2y - 15xy^2 + 7y^2$

Ans:

Sl.No.	Expression	Terms	Coefficient of y^2
(i)	$8 - xy^2$	$-xy^2$	$-x$
(ii)	$5y^2 + 7x$	$5y^2$	5
(iii)	$2x^2y - 15xy^2 + 7y^2$	$-15xy^2$ $7y^2$	$-15x$ 7

16. Find the values of the following expressions for $x = 2$.

(i) $x + 4$ (ii) $4x - 3$

Ans: Putting $x = 2$

(i) In $x + 4$, we get

$x + 4 = 2 + 4 = 6$

(ii) In $4x - 3$, we get

$4x - 3 = (4 \times 2) - 3 = 8 - 3 = 5$

17. Simplify the expression and find its value when $a = 5$ and $b = -3$.

$2(a^2 + ab) + 3 - ab$

Ans: From the question, it is given that $a = 5$ and $b = -3$

We have, $2a^2 + 2ab + 3 - ab = 2a^2 + ab + 3$

Then, substitute the value of a and b in the equation.

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

$= 50 - 15 + 3 = 35 - 15 = 38$

SECTION – E

Questions 18 to 20 carry 4 marks each.

18. (i) If $z = 10$, find the value of $z^3 - 3(z - 10)$.

(ii) If $p = -10$, find the value of $p^2 - 2p - 100$

Ans: (i) From the question, it is given that $z = 10$

We have, $z^3 - 3z + 30$

Then, substitute the value of z in the equation.

$= (10)^3 - (3 \times 10) + 30 = 1000 - 30 + 30 = 1000$

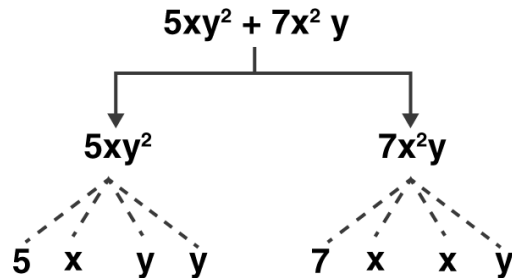
(ii) From the question, it is given that $p = -10$

We have, $p^2 - 2p - 100$

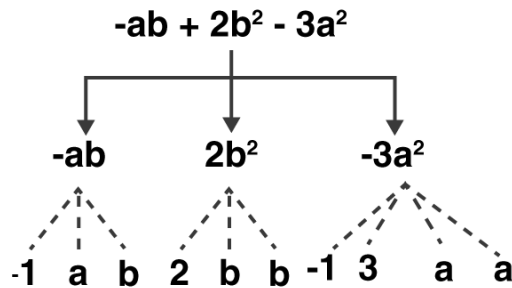
Then, substitute the value of p in the equation.
 $= (-10)^2 - (2 \times (-10)) - 100 = 100 + 20 - 100 = 20$

19. Identify the terms and their factors in the expressions: (i) $5xy^2 + 7x^2y$ (ii) $-ab + 2b^2 - 3a^2$
 Show the terms and factors by tree diagrams.

Ans: (i) Expression: $5xy^2 + 7x^2y$
 Terms: $5xy^2, 7x^2y$
 Factors: 5, x, y, y; 7, x, x, y



(ii) Expression: $-ab + 2b^2 - 3a^2$
 Terms: $-ab, 2b^2, -3a^2$
 Factors: -a, b; 2, b, b; -3, a, a



20. If $p = -2$, find the value of:

(i) $-3p^2 + 4p + 7$ (ii) $-2p^3 - 3p^2 + 4p + 7$
 Ans: (i) $-3p^2 + 4p + 7$

From the question, it is given that $p = -2$
 Then, substitute the value of p in the question.
 $= (-3 \times (-2)^2) + (4 \times (-2)) + 7 = (-3 \times 4) + (-8) + 7$
 $= -12 - 8 + 7 = -20 + 7 = -13$

(ii) $-2p^3 - 3p^2 + 4p + 7$
 From the question, it is given that $p = -2$
 Then, substitute the value of p in the question.
 $= (-2 \times (-2)^3) - (3 \times (-2)^2) + (4 \times (-2)) + 7$
 $= (-2 \times -8) - (3 \times 4) + (-8) + 7 = 16 - 12 - 8 + 7 = 23 - 20 = 3$

