

Algebraic Expressions

Q1. Write the algebraic expression for each of the following statements using variables and constants.

- Product of six and the successor of a number x :

- Product of two numbers a and b added to their sum:

- A number p multiplied by itself 5 times:

- Sum of the squares of two numbers p and q :

Q2. Fill in the blanks by choosing the correct option:

- The co-efficient of x^2y^5 in the term $-x^4y^5$ is _____.
a. x^2 b. $-x^2$
- $2xy$ and $\frac{1}{5}xy$ are _____ terms.
a. like b. unlike
- $-12a^4b^3$ and _____ are like terms.
a. $-12p^4q^3$ b. $6a^4b^3$
- The degree of the polynomial $2x^2y^3 + x^3 + 2xyz$ is _____.
a. 5 b. 3

Q3. Write the correct degree of the following polynomials:

Polynomial	Degree
$2x^3y^3 + 3xyz - 6y^4$	
$-5p^4q^5 + 2p^2q^3r$	
$10abc$	
$-7xyz^2$	

Q4. What should be added to $7p^2q^3 - 2pq^2$ to get $-3p^2q^3 + pq^2 - pq$?

Q5. Two polynomials A and B are such that:

$$A - 2B = 4x^2y^3 + 2xy$$

If $B = 5xy - 7x^2y^3$, find A.

Answer: A = _____

Q6. The length and breadth of a rectangle is $(2x^2y^4 + 3x^2y^2)$ and $(5x^2y^4 - 2x^2y^2)$. Find the perimeter of the rectangle if $x = 2$ and $y = -1$.

Answer: Perimeter = _____

Q7. If $A = 7x + 9y$, $B = 8x - 4y$, find $(2A - B) - (A + 2B)$.

Answer: _____

Q8. Find the numbers and fill in the blanks:

a. Use any four prime numbers to get the sum 35.

$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = 35$$

b. Use any three prime numbers to get the sum 32.

$$\underline{\quad} + \underline{\quad} + \underline{\quad} = 32$$

Q9. If $x = 5$, $y = 3$ and $z = -8$, evaluate the following and match the correct answers:

$x^2 + y^2 + z^2$	91
$2x^3 - 3y - 8z$	331
$3x + 4x^2y - 2z$	305
$-2z + 5xy$	98

Q10. Simplify :

a. $7x + 3y - \{2x - 3y - 2(x + y)\}$

b. $p^2 - [3q^2 - \{2p^2 - q^2 - \overline{q^2 - 2p^2}\}]$

Answers

1. a. $6(x + 1)$; b. $ab + (a + b)$; c. p^5 ; d. $p^2 + q^2$

2. a. $-x^2$; b. like; c. $6a^4b^3$; d. 5

3.

Polynomial	Degree
$2x^3y^3 + 3xyz - 6y^4$	6
$-5p^4q^5 + 2p^2q^3r$	9
$10abc$	3
$-7xyz^2$	4

4. $-10p^2q^3 + 3pq^2 - pq$

5. $-10x^2y^3 + 12xy$

6. 64 units

7. $-17x + 21y$

8. a. $2 + 3 + 13 + 17$; b. $13 + 17 + 2$

9.

$x^2 + y^2 + z^2$	98
$2x^3 - 3y - 8z$	305
$3x + 4x^2y - 2z$	331
$-2z + 5xy$	91

10. a. $7x + 8y$; b. $5(p^2 - q^2)$