

# Algebraic Expressions

**Q1. Match the statements with the correct algebraic expression:**

Statement	Expression
Sum of squares of two numbers $x$ and $y$	$\frac{1}{y} - \frac{2}{3}x$
Two-third of a number $x$ added to itself	$\frac{2}{3}x + x$
Sum of two-third of a number $x$ and its square	$x^2 + y^2$
Subtract $\frac{2}{3}x$ from the reciprocal of a number $y$	$\frac{2}{3}x + x^2$

**Q2. Answer the following questions for the given algebraic expression:**

$$2p^3q^2 - 6pq^3 - 1$$

- Is it a monomial, binomial or trinomial? \_\_\_\_\_
- What is the numerical factor in the term  $-6pq^3$ ? \_\_\_\_\_
- What is the degree of the polynomial? \_\_\_\_\_
- What is the coefficient of  $p$  in  $-6pq^3$ ? \_\_\_\_\_

**Q3. Arrange the following polynomials in ascending order of their degree:**

$$2a^4, 9xyz, 7x^5y^3, 19x^2, -20a^2bcd$$

\_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_

**Q4. Sum of two polynomials is  $9x^3y^2 + 3xy$ . If one of the polynomials is  $-2x^3y^2 + x^2y^3 - 4xy$ , find the other.**

Answer: \_\_\_\_\_

**Q5. A polynomial Y is such that:**

$$Y = 3pq^2r^3$$

What will be 10 more than twice of Y?

Answer: \_\_\_\_\_

**Q6. If  $a = 2$ ,  $b = -2$ , find the perimeter of a regular pentagon whose one side is  $2a^2 - 3ab$ .**

Answer: Perimeter = \_\_\_\_\_

**Q7. If  $A = -5x + 3y$ ,  $B = 5x - 3y$ , find  $(3A + B) - (3A - B)$ .**

Answer: \_\_\_\_\_

**Q8. Sum of one even prime and two odd primes is twice of 10. Find the numbers and fill in the blanks:**

\_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

**Q9. If  $x = 2$ ,  $y = 5$  and  $z = -7$ , evaluate and match the following:**

$(-x - y) + z$	-10
$(x - y) + z$	-14
$(x + z) + y$	14
$(x - z) + y$	0

**Q10. Simplify:**

a.  $7ab + 10x - (2a + (3x - 2a) - 7x)$

b.  $p^2 - [2q^2 + 3p^2 - \{4p^2 - 3q^2 + (5q^2 - 2p^2 - 3q^2 + 4p^2)\}]$

# Answers

1.

Statement	Expression
Sum of squares of two numbers $x$ and $y$	$x^2 + y^2$
Two-third of a number $x$ added to itself	$\frac{2}{3}x + x$
Sum of two-third of a number $x$ and its square	$\frac{2}{3}x + x^2$
Subtract $\frac{2}{3}x$ from the reciprocal of a number $y$	$\frac{1}{y} - \frac{2}{3}x$

2. a. trinomial; b.  $-6$ ; c.  $5$ ; d.  $-6q^3$

3.  $19x^2$ ;  $9xyz$ ;  $2a^4$ ;  $-20a^2bcd$ ;  $7x^5y^3$

4.  $11x^3y^2 - x^2y^3 + 7xy$

5.  $6pq^2r^3 + 10$

6. 100 units

7.  $10x - 6y$

8.  $2 + 7 + 11 = 20$

9.

$(-x - y) + z$	$-14$
$(x - y) + z$	$-10$
$(x + z) + y$	$0$
$(x - z) + y$	$14$

10. a.  $7ab + 14x$  ; b.  $4p^2 + 3q^2$