Algebraic Expressions
Linear equations in one variable

Q1 Identify the terms, coefficients and constant in $2y^2+x+5$.

Q2 a) Find the sum of $(4x+5y+8)$, $(7x-2y)$ and $(-9x+6y+9)$.

b) Add $(6a^2-5ab+4b^2)$, $(-5a^2+8ab-4b^2)$ and $(-7a^2+12ab+3b^2)$.

Q3 Solve the equation and check the solution: $4-(2x-3)-3(x+2) = 4$

Q4 Solve the equations:

i) $2x + \dfrac{3}{x} - 4 = \dfrac{3}{4}$

ii) $\dfrac{-5}{2}(x - 4) - 3(x + 3) = 0$

Q5 a) Subtract $(2x^3+4y^3-3xy)$ from $(2x^3-4y^3-3xy)$.

b) What should be added to $(-y^2-5y-12)$ to get $(-y^2+15)$?

Q6 Find the perimeter of a rectangle whose length is $-6y+3x$ and breadth is $7y-2x$.

Q7 Simplify and find the value of the following expression when x=3 and y=1:

$5(x^2+y^2+2xy) - [3(x^2+y^2-2xy) - \{y^3+3(x-4)\}]$

Q8 Write the following cases in the form of algebraic expressions:

i) The sum of number 7 and x.

ii) one third of x.

iii) One- fourth of the sum of a and b.

iv) 3 less than the difference of m and n.

v) 2 less than the quotient of x and y.

Q9 Change the following algebraic expressions to statements in words.

i) $3(x+y)$

ii) $z \times x = 3$

iii) $\dfrac{3}{4}(x+y)$

Q10 Neha's mother is 34 years old. Two years from now mother's age will be 4 times Neha's present age. What is Neha's present age?

Q11 The sum of two consecutive multiples of 3 is 69. Find them.

Q12 a) How much is x+3y-4z greater than 3x-2y+z?

 b) How much does -2a² +6b+9 exceed 4a² -2b+7?

Q13 Satish left one-fifth of his property for his son, one-fifth for his daughter and the remaining for his wife. If wife's share in the property was worth Rs. 2,88,000. Find the total worth of Satish's property.

Q14 Solve the riddle: "I am a number, tell my identity. Take me seven times over and add a fifty. To reach a triple century you still need forty."

Q15 Subtract 3x²-8x+7 from the sum of 8x²-7x+5 and 2x²+6x-9.

Q16 The highest marks obtained by a student in the class is thrice the lowest marks plus 9. The highest score is 84. What is the lowest score?

Q17 A rational number, in Mathematics, can be defined as any number which can be represented in the form of $\frac{p}{q}$ where q ≠ 0. Also, we can say that any fraction fits under the category of rational numbers, where the denominator and numerator are integers and the denominator is not equal to zero. The numerator of a rational number is 5 less than the denominator. If the denominator is increased by 7 and numerator by 2, we again get the same rational number. Find the number.

Q18 Simplify:

i) (9x³-7x²-5) - (-2x³+4x²+1) + (6x³+5)

ii) (8a³b-7a²b²-4ab) - (5a³b+8a²b²-7ab) + (a³b+ab)

Q19 The sum of the ages of Rohit and his father is 70 years. After 10 years, his father will be twice as old as him. Find their present ages.

Q20 Find the perimeter of a triangle with sides 3x²+2, 4x-3 and x²-4x.