Grade 9 Mathematics – Worksheet

Topics: Polynomials & Linear Equations in Two Variables

Part A: Polynomials

- Q1. Find the value of:

  a) $x^2 + 2x + 1$ when $x = -1$

  b) $2y^2 - 3y + 4$ when $y = 2$
- Q2. Verify whether $x = 2$ is a zero of the polynomial $p(x) = x^2 - 5x + 6$.
- Q3. Factorize:

  a) $x^2 - 9$

  b) $y^2 + 7y + 10$
- Q4. Divide $x^3 + 3x^2 + 3x + 1$ by $x + 1$.
- Q5. If $p(x) = x^2 - 2x - 15$, find its zeros and verify the relationship between zeros and coefficients.

Part B: Linear Equations in Two Variables

- Q6. Write the following as linear equations in two variables:

  a) The sum of two numbers is 12.

  b) A number is 3 more than twice another number.
- Q7. Solve the pair of equations using the substitution method:

  $x + y = 10$, $2x - y = 4$
- Q8. Solve by elimination method:

  $3x + 2y = 11$, $2x - 3y = -4$
- Q9. Draw the graph of the pair of equations:

  $x + y = 6$, $x - y = 2$

  and find the solution.
- Q10. (Application/Word Problem)

  The sum of a two-digit number and the number obtained by reversing its digits is 121. If the difference between the digits is 3, find the number.