Grade 9 - Final Exam

Practice Paper 2

Mathematics

Based on Maharashtra Board Syllabus (NEP 2025-26) - Full Syllabus

Instructions:

- Duration: 2 hours
- Maximum marks: 50
- All questions are compulsory
- Show all your working clearly

Section A: Sets and Real Numbers (10 Marks)

1. Answer the following: **[5 marks]**

a) Write the set of prime numbers less than 10 using the listing method. = _____

b) If P = {m, n, o, p} and Q = {o, p, q, r}, find P ∪ Q. = _____

c) If D = {y | y is a multiple of 4, 5 < y < 25}, write D using the listing method. = _____

d) Is every rational number an integer? (Yes/No) = _____

e) Write 1.5 in p/q form. = _____

2. Answer the following: **[5 marks]**

a) Write 3/5 in decimal form. = _____

b) Simplify: √144 + √25 = _____

c) Find the value of |9|. = _____

d) Write two rational numbers between 0.75 and 1. = _____, _____

e) Is √169 a rational number? (Yes/No) = _____

Section B: Polynomials and Factorisation (10 Marks)

3. Answer the following on polynomials: **[5 marks]**

a) Write the degree of the polynomial $8b^6 - 3b^2 + 11$. = _____

b) Add the polynomials: $(7a^2 + 2a - 5) + (3a^2 - 4a + 1)$ = _____

c) Subtract the polynomial (5x - 2) from (9x + 6). = _____

d) Multiply: $4y(y^2 - 5y + 3)$ = _____

e) Identify the constant term in the polynomial $10x^2 + 3x - 8$. = _____

4. Factorise the following algebraic expressions: **[5 marks]**

a) 6b + 18 = _____

b) $14y^2 - 21y$ = _____

c) $10a^2b^3 + 15a^3b^2$ = _____

d) $x^2 - 81$ = _____

e) $p^2 + 14p + 49$ = _____

Section C: Parallel Lines & Transversal and Congruence of Triangles (10 Marks)

5. In the given figure (assume lines a and b are parallel and c is a transversal): **[5 marks]**

[Imagine two parallel lines a and b intersected by a transversal c. Angles are numbered 1-8.]

If ∠2 = 70°, find the measure of:

a) ∠6 (Corresponding angle) = _____ °

b) ∠7 (Alternate exterior angle) = _____ °

c) ∠3 (Consecutive interior angle to ∠2's adjacent angle on line a) = _____ °

d) ∠4 (Vertically opposite angle) = _____ °

e) What is the relationship between ∠2 and ∠1? = _____

6. Answer the following questions on congruence of triangles: **[5 marks]**

a) State the SSS congruence criterion. = _____

b) If in ΔPQR and ΔSTU, PQ=ST, QR=TU, and PR=SU, then ΔPQR ≅ ΔSTU by _____ criterion.

c) If ΔXYZ ≅ ΔLMN, then side YZ corresponds to side _____. = _____

d) If in two right-angled triangles, the hypotenuse and one acute angle are equal, the triangles are congruent by _____ criterion.

e) Draw a rough sketch of two triangles congruent by AAS criterion and mark the equal parts.

Section D: Construction of Triangles and Mixed Problems (20 Marks)

7. Construct the following triangles (Rough sketch is sufficient for the paper): **[10 marks]**

a) Construct ΔABC such that AB = 8 cm, BC = 10 cm, and AC = 12 cm.

b) Construct ΔPQR such that PQ = 7 cm, ∠P = 60°, and PR = 9 cm.

c) Construct ΔXYZ such that XY = 9 cm, ∠X = 50°, and ∠Y = 80°.

d) Construct a right-angled triangle LMN, right-angled at M, such that LM = 6 cm and LN = 10 cm.

8. Word Problems: **[10 marks]**

a) The sum of two rational numbers is 7/8. If one number is 1/4, find the other number. = _____

b) The difference between two integers is -12. If one integer is 5, find the other integer. (Two possible answers) = _____ or _____

c) The product of two polynomials is $y^2 + 8y + 15$. If one polynomial is $(y + 3)$, find the other polynomial. = _____

d) A line intersects two parallel lines. If one alternate interior angle is 55°, find the measure of its corresponding angle. = _____ °

e) If $\Delta STU \cong \Delta VWX$ by ASA criterion, and $ST=VW$, $\angle S=\angle V$, what other part must be equal? = _____

End of Practice Paper 2