

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 $P \cup Q$. = _____

c) If $D = \{y \mid y \text{ is a multiple of } 4, 5 < y < 25\}$, 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 $\frac{3}{5}$ in decimal form. = _____
- b) Simplify: $\sqrt{144} + \sqrt{25} =$ _____
- c) Find the value of $|9|$. = _____
- d) Write two rational numbers between 0.75 and 1. = _____, _____
- e) Is $\sqrt{169}$ 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 $\angle 2 = 70^\circ$, find the measure of:

- a) $\angle 6$ (Corresponding angle) = _____ $^\circ$
- b) $\angle 7$ (Alternate exterior angle) = _____ $^\circ$
- c) $\angle 3$ (Consecutive interior angle to $\angle 2$'s adjacent angle on line a) = _____ $^\circ$
- d) $\angle 4$ (Vertically opposite angle) = _____ $^\circ$
- e) What is the relationship between $\angle 2$ and $\angle 1$? = _____

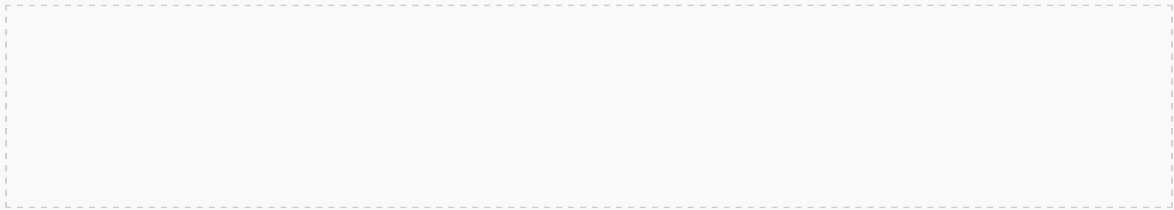
6. Answer the following questions on congruence of triangles: **[5 marks]**

- a) State the SSS congruence criterion. = _____
- b) If in $\triangle PQR$ and $\triangle STU$, $PQ=ST$, $QR=TU$, and $PR=SU$, then $\triangle PQR \cong \triangle STU$ by _____ criterion.
- c) If $\triangle XYZ \cong \triangle LMN$, 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.

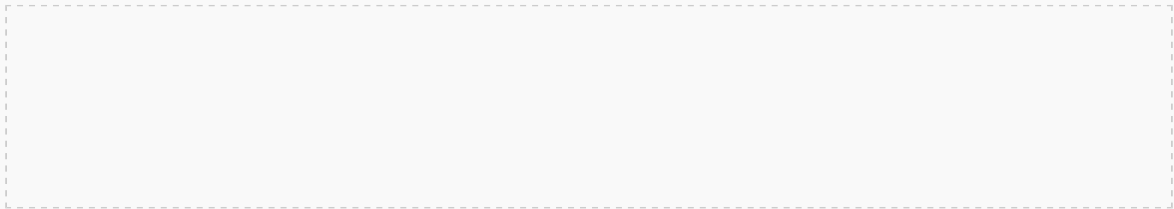
Section D: Construction of Triangles and Mixed Problems (20 Marks)

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

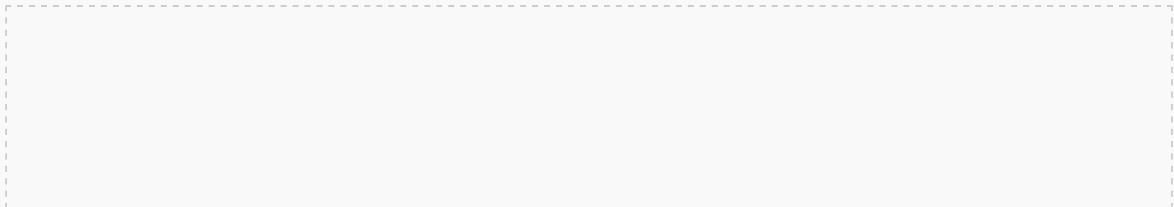
a) Construct $\triangle ABC$ such that $AB = 8$ cm, $BC = 10$ cm, and $AC = 12$ cm.



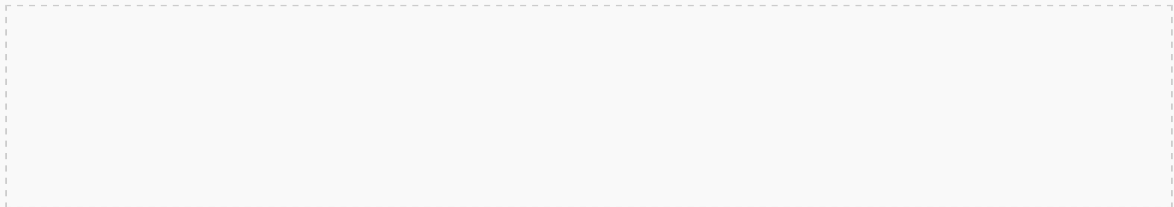
b) Construct $\triangle PQR$ such that $PQ = 7$ cm, $\angle P = 60^\circ$, and $PR = 9$ cm.



c) Construct $\triangle XYZ$ such that $XY = 9$ cm, $\angle X = 50^\circ$, and $\angle Y = 80^\circ$.



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 $\frac{7}{8}$. If one number is $\frac{1}{4}$, 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. = _____ $^\circ$
- e) If $\triangle STU \cong \triangle VWX$ by ASA criterion, and $ST = VW$, $\angle S = \angle V$, what other part must be equal? = _____

End of Practice Paper 2

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