Grade 8 - 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: Rational & Irrational Numbers and Squares/Cubes (10 Marks)

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

a) Write the rational number for "negative seven-eighths". = _____

b) Convert 2.25 into a rational number (fraction in simplest form). = _____

c) Is √16 a rational number? (Yes/No) = _____

d) Find the square of 14. = _____

e) Find the cube root of 216. = _____

2. Solve the following operations on rational numbers: **[5 marks]**

a) Add: (-2/3) + (1/6) = _____

b) Subtract: 5/8 - 1/4 = _____

c) Multiply: (-3/10) × (5/9) = _____

d) Divide: (4/5) ÷ (-8/15) = _____

e) Write two rational numbers between 0.3 and 0.4. = _____, _____

Section B: Parallel Lines and Transversal & Expansion Formulae (10 Marks)

3. Answer the following geometry questions: **[5 marks]**

a) If two parallel lines are intersected by a transversal, what is the relationship between alternate interior angles? = _____

b) If a pair of corresponding angles are equal, are the two lines parallel? (Yes/No) = _____

c) If ∠P and ∠Q are consecutive interior angles and ∠P = 110°, find ∠Q (assuming lines are parallel). = _____ °

d) Draw a rough sketch of two parallel lines intersected by a transversal and mark a pair of alternate interior angles.

e) In the figure drawn above, if one alternate interior angle is 70°, what is the measure of the other? = _____ °

4. Expand the following: **[5 marks]**

a) $(y + 9)^2$ = _____

b) $(b - 7)^2$ = _____

c) $(4p + 1)^2$ = _____

d) $(a + 10)(a - 10)$ = _____

e) $(y + 7)(y + 1)$ = _____

Section C: Factorisation of Algebraic Expressions (10 Marks)

5. Factorise the following: **[5 marks]**

a) $5a + 15$ = _____

b) $9x^2 - 15x$ = _____

c) $12m^2n^3 + 18m^3n^2$ = _____

d) $p^2 - 100$ = _____

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

6. Factorise the following: **[5 marks]**

a) $y^2 - 16y + 64$ = _____

b) $m^2 + 8m + 15$ = _____

c) $x^2 - 9x + 20$ = _____

d) $36c^2 - 49$ = _____

e) $9p^2 - 30p + 25$ = _____

Section D: Division of Algebraic Expressions and Statistics (20 Marks)

7. Divide the following algebraic expressions: **[5 marks]**

a) $(10a^2 - 25a) \div 5a =$ _____

b) $(18y^5 + 24y^4) \div 6y^4 =$ _____

c) $(x^2 - 49) \div (x - 7) =$ _____

d) $(a^2 + 12a + 36) \div (a + 6) =$ _____

e) $(m^2 - 6m + 9) \div (m - 3) =$ _____

8. Answer the following statistics questions: **[5 marks]**

a) Find the mean of the data: 2, 4, 6, 8, 10. = _____

b) What is the mode of the data: 15, 20, 15, 25, 20, 15? = _____

c) Find the median of the data: 20, 22, 24, 26, 28. = _____

d) Find the median of the data: 1, 3, 5, 7, 9, 11. = _____

e) In a pictograph, what does each symbol represent? = _____

9. Solve the following: **[5 marks]**

a) If the mean of 5, 7, 9, x is 8, find the value of x. = x = _____

b) The data is 10, 12, 12, 15, 15, 15, 20. Find the mode. = _____

c) Find the median of the data: 1, 2, 3, 4, 5, 6, 7. = _____

d) A bag contains 5 red and 3 blue balls. What is the probability of drawing a red ball? = _____

e) A letter is chosen from the word 'MATHS'. What is the probability of choosing a vowel? = _____

10. Word Problems: **[5 marks]**

a) The sum of two rational numbers is -1/2. If one number is 3/4, find the other number. = _____

b) The square root of a number is 19. Find the number. = _____

c) The side of a cube is 8 cm. Find its volume. = _____ cm^3

d) If the temperature is 8°C and it drops by 10°C, what is the new temperature? = _____ °C

e) A sum of ₹400 is divided between P and Q in the ratio 2:3. How much does Q get? = ₹_____

End of Practice Paper 2