

Practice Paper (Mid-Term) — Set 2
(Based on Ganita Prakash – Part I) Session: 2026-27
CLASS – VIII
SUBJECT – MATHEMATICS

Time Allowed: $2\frac{1}{2}$ hours

Maximum Marks: 60

GENERAL INSTRUCTIONS:

Read the following instructions carefully and follow them:

- (i) This question paper contains 16 questions. All questions are compulsory.
- (ii) Question paper is divided into FIVE sections – Section 'A', 'B', 'C', 'D' and 'E'.
- (iii) In section 'A' question number 1 have 12 multiple choice subparts carrying 1 mark each.
- (iv) In section 'B' question number 2 to 7 are Objective type questions carrying 2 marks each.
- (v) In section 'C' question number 8 to 10 are Short Answer (SA) type questions carrying 3 marks each.
- (vi) In section 'D' question number 11 to 13 are Long Answer (LA) type questions carrying 5 marks each.
- (vii) In section 'E' question number 14 to 16 are source $\frac{\text{based}}{\text{case}}$ -based questions, whose subparts are of 1, 1 and 2 marks respectively.
- (viii) There is no overall choice. However, internal choice has been provided in 1 question of section 'B', 1 question of section 'C', 2 questions of section 'D', and in each subpart of source $\frac{\text{based}}{\text{case}}$ -based question carrying 2 marks in section 'E'. You have to attempt only one of the alternatives in all such questions.
- (ix) Draw neat figures wherever required.
- (x) Use of calculators is NOT allowed.

SECTION – A

Question 1 consists of Multiple-Choice questions (i–xii) of 1 mark each.

Choose the appropriate option from the given options:

$12 \times 1 = 12$

1.(i) Which of the following ratios is equivalent to 5 : 8? **[1]**

(a) 15 : 24	(b) 10 : 15
(c) 20 : 36	(d) 25 : 36

(ii) In a parallelogram, adjacent angles are in the ratio 2 : 3. Find the smaller angle. **[1]**

(a) 60°	(b) 72°
(c) 80°	(d) 90°

(iii) The standard form of 0.000523 is: **[1]**

(a) 5.23×10^4	(b) 5.23×10^{-4}
(c) 523×10^{-6}	(d) 5.23×10^{-3}

(iv) Which of the following is a perfect square? **[1]**

(a) 1024	(b) 1152

(c) 1225	(d) 1300
----------	----------

(v) Using a suitable identity, $(x + 9)^2$ is: [1]

(a) $x^2 + 18x + 81$	(b) $x^2 + 9x + 81$
----------------------	---------------------

(c) $x^2 + 18x + 18$	(d) $x^2 + 81$
----------------------	----------------

(vi) CDXLIV (in Roman numerals) equals: [1]

(a) 444	(b) 446
---------	---------

(c) 454	(d) 464
---------	---------

(vii) The digital root of 56789 is: [1]

(a) 6	(b) 7
-------	-------

(c) 8	(d) 9
-------	-------

(viii) a and b are inversely proportional. If a = 8 when b = 6, find b when a = 12. [1]

(a) 3	(b) 4
-------	-------

(c) 5	(d) 6
-------	-------

(ix) Which quadrilateral always has diagonals that are both equal and perpendicular? [1]

(a) parallelogram	(b) rectangle
-------------------	---------------

(c) square	(d) trapezium
------------	---------------

(x) The value of $\sqrt[3]{(64 \times 27)}$ is: [1]

(a) 9	(b) 10
-------	--------

(c) 11	(d) 12
--------	--------

(xi) Using a suitable identity, 998×1002 is: [1]

(a) 999996	(b) 999984
------------	------------

(c) 998004	(d) 1000004
------------	-------------

(xii) In the Egyptian numeral system ($\mathbf{9} = 100$, $\cap = 10$, $| = 1$), which of the following represents 213? [1]

(a) $\mathbf{99}\cap $	(b) $\mathbf{9}\cap\cap $
--------------------------	-----------------------------

(c) $\mathbf{99}\cap\cap $	(d) $\mathbf{9}\cap $
----------------------------	-------------------------

SECTION-B

Question 2 to 7 is Objective type questions of 2 marks each

6×2=12

2. Find the smallest number by which 1536 must be divided to make it a perfect cube. [2]

3. Simplify: $(2^3)^{-2} \times 2^7$ [2]

4. The diagonals of a rhombus are 16 cm and 12 cm. Find the length of its side. [2]

5. (a) Find the smallest 5-digit number divisible by 36.

OR

(b) Write MCMXCIV in Hindu-Arabic numerals. [2]

6. A recipe needs 3 cups of flour for 2 dozen cookies. How many cups are needed for 5 dozen cookies? [2]

7. Using a suitable identity, find the value of $(2a + 3b)^2$ when $a = 5$, $b = 2$. [2]

SECTION-C

Question 8 to 10 is Short Answer type questions of 3 marks each

3×3 = 9

8. Add the following Roman numerals without converting them to Hindu-Arabic numerals:

(i) CXLIV + CCXXI

(ii) DCCC + CXCIX

[3]

9. (a) In parallelogram ABCD, $\angle A = (3x + 15)^\circ$ and $\angle C = (5x - 25)^\circ$. Find the value of x and all four angles.

OR

(b) If the diagonals of a quadrilateral bisect each other and are also equal in length, prove that the quadrilateral is a rectangle. [3]

10. Expand the following:

(i) $(3a - 2b)(5a + b)$

(ii) $(m + n - 1)(m + n + 1)$

[3]

SECTION-D

Question 11 to 13 is Long Answer type questions of 5 marks each

3×5=15

11. (i) Find the smallest number by which 1372 must be multiplied so that the product is a perfect cube. Also find the cube root of the product.

(ii) Find the square root of 15129 by prime factorisation.

[5]

12. (i) Simplify: $4^{2x} \div 4^{x+1} \times 4^3$

(ii) Find the value of x if $5^{2x-1} = 125$.

[5]

OR

(i) Simplify: $(3^{-1} + 4^{-1})^{-1}$

(ii) Find the value of $(x^{-1})^{-2}$ when $x = \frac{1}{3}$.

[5]

13. Solve the following puzzles:

(i) $AB \times 9 = DAB$ (find the digits A, B, D)

(ii) 12ab6 is divisible by 18. List all possible values of the digits a and b.

(iii) Write the general form of a number that leaves remainder 3 when divided by 8.

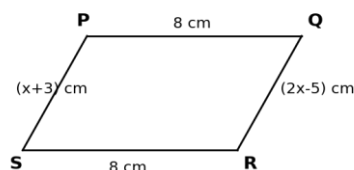
[5]

SECTION-E

Question 14 to 16 is Source-based/ Case Study questions of 4 marks each

3×4=12

14. In the figure, PQRS is a parallelogram with $PQ = SR = 8$ cm, $PS = (x + 3)$ cm, and $QR = (2x - 5)$ cm.



Based on the above information, answer the following:

(i) Using the property that opposite sides of a parallelogram are equal, form an equation and solve for x. [1 Mark]

(ii) Find the length of PS. [1 Mark]

(iii) (a) Find the perimeter of parallelogram PQRS. [2 Marks]

OR

(iii) (b) If the diagonals of the parallelogram bisect each other at point O, and diagonal PR is 14 cm, find the length of OP. [2 Marks]

15. A teacher explains three algebraic identities to her students:

(A) $(a + b)^2 = a^2 + 2ab + b^2$

(B) $(a - b)^2 = a^2 - 2ab + b^2$

(C) $a^2 - b^2 = (a + b)(a - b)$

Based on the above information, answer the following:

(i) Find the value of $(37)^2$ using identity (A). [1 Mark]

(ii) Find the value of 96×104 using identity (C). [1 Mark]

(iii) (a) Prove that: $(p + q)^2 - (p - q)^2 = 4pq$ [2 Marks]

OR

(iii) (b) Using the identity $a^2 = (a + b)(a - b) + b^2$, find the value of 203^2 . [2 Marks]

16. A water purifier treats 1200 litres of water in 8 hours. The amount of water treated is directly proportional to the time it operates.

Based on the above information, answer the following:

(i) Find the treatment rate per hour. [1 Mark]

(ii) How many litres will it treat in 5 hours? [1 Mark]

(iii) (a) How many hours will it take to treat 2700 litres? [2 Marks]

OR

(iii) (b) Check whether the following are in proportion: 8 hours : 1200 litres :: 14 hours : 2100 litres. [2 Marks]

Deepika Bhati

(Teaching Mathematics online/offline passionately since 2013)

Infinity Think Beyond

www.infinitythinkbeyond.co.in

Join our WhatsApp community for more practice papers & updates:

<https://chat.whatsapp.com/H6Ho8HCH7imJh4Z6HV9bos>

AN EDUCATIONAL INSTITUTE