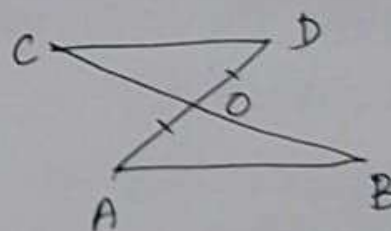
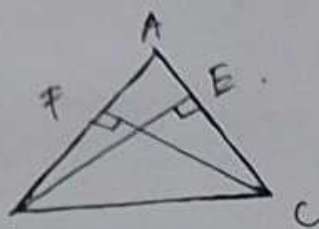


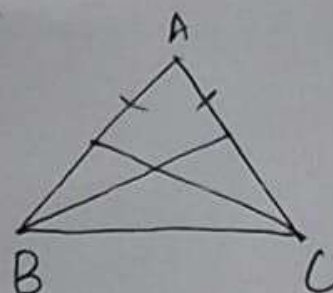
- 1) Answer the following (Any Five)
- Give definition for each of the following:
i) Parallel lines ii) radius of a circle iii) Square.
 - If a point C lies between two points A and B such that $AC = BC$, then prove that $AC = \frac{1}{2} AB$. Explain by drawing a figure.
 - Write the five postulates of Euclid.
 - Prove that angle opposite to equal sides of an isosceles triangle are equal.
 - Line segment AB is parallel to another line segment CD. O is the mid-point of AB. Show that $\triangle AOB \cong \triangle DOC$.
i) O is also the mid-point of BC.



- 2) ABC is an isosceles triangle in which altitudes BE and CF are drawn to equal sides AC and AB respectively. Show that ~~these~~ these altitudes are equal.

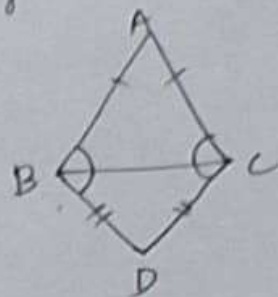


- 3) E and F are respectively the mid points of equal sides AB and AC of $\triangle ABC$. Show that $BF = CE$.

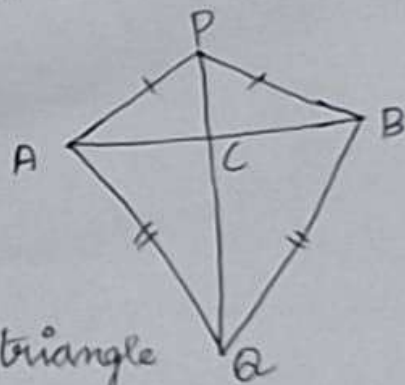


Answer the following (Any Four)

1) $\triangle ABC$ and $\triangle DCB$ are two isosceles triangles on the same base BC . Show that $\angle ABD = \angle ACD$

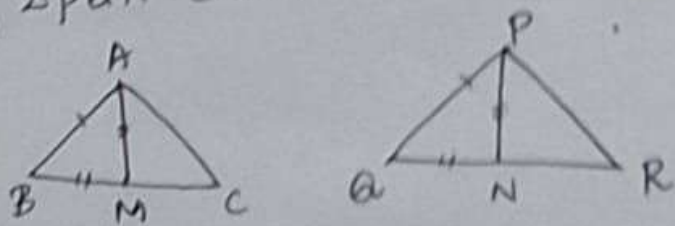


2) AB is a line-segment. P and Q are points on opposite sides of AB such as each of them is equidistant from the points A and B . Show that the line PQ is the perpendicular bisector of AB .



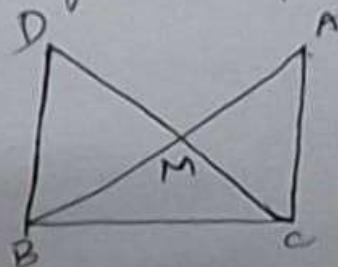
3) AD is an altitude of an isosceles triangle $\triangle ABC$ in which $AB = AC$. Show that, (i) AD bisects BC
(ii) AD bisects $\angle A$.

4) Two sides AB and BC and median AM of one triangle $\triangle ABC$ are respectively equal to sides PQ and QR and median PN of $\triangle PQR$. Show that: (i) $\triangle ABM \cong \triangle PQN$ (ii) $\triangle ABC \cong \triangle PQR$



5) In right triangle ABC , right angled at C , M is the mid-point of hypotenuse AB . C is joined to M and produced to point D such that $DM = CM$. Point D is joined to point B . Show that

- (i) $\triangle AMC \cong \triangle BMD$
(ii) $\angle DCB$ is a right angle.
(iii) $CM = \frac{1}{2} AB$



I. Answer the following.

① Using $(a+b)^2 = a^2 + 2ab + b^2$, expand the following:

i) $\left(\frac{3}{4}s + 8t\right)^2$

② Using $(a+b)^2 = a^2 + 2ab + b^2$ find the value of $(105)^2$

③ Factor completely: $3a^2 + 4ab + \frac{4}{3}b^2$.

④ Find the values using $(a-b)^2 = a^2 - 2ab + b^2$.
i) $(299)^2$

⑤ Factor using suitable identities: $\frac{p^2}{16} - 2 + \frac{16}{p^2}$

⑥ Fill in the blanks to complete the following identity:
_____ $(x+1) = (3x^2 - 4x - 7)$

⑦ Find product without multiplying:
i) (23×17)

⑧ Find the product $(s-2t)(s^2+2st+4t^2)$

⑨ Factor: $x^2 - x - 42$.

⑩ Find the value: $(-107)^3$.

11) Answer the following (Any four)

5x4=20

① Find possible expressions for length, breadth and heights of each of cuboids whose volumes are given by,

i) $6a^2 - 24b^2$

ii) $3ps^2 - 15ps + 12p$

② Simplify: i) $\frac{4x^2 + 4x + 1}{4x^2 - 1}$ ii) $\frac{9(3a^3 - 24b^3)}{9a^2 - 36b^2}$

③ Find possible expressions for length and breadth and heights of each of following rectangles whose areas are given by,

i) $25a^2 - 30ab + 9b^2$

ii) $36s^2 - 49t^2$

④ A rectangular pool is such that its breadth is 4m less than its length and its area is 96 Sq. metres. Find the length and breadth of the pool.

⑤ If both $x-2$ and $x-\frac{1}{2}$ are factors of $px^2 + 5x + a$, show that $p=a$.

⑥ Factor the following:

⑦ Simplify the following.

i) $\frac{p^4 - 16}{p^2 - 4p + 4}$

ii) $\frac{4y^2 - 20yz + 25z^2}{(25z^2 - 4y^2)}$

30 marks

विद्यवा
दहाई
कौन्ही
3 members

21/8/2026

Medium - English
1st and 2nd unit

1. Who did the navigator meet at the outskirts of Verona?
(1 mark)
2. Describe the appearance of Nicolo and Jacopo? (3 marks)
3. What were the various jobs undertaken by the little boy? (3 marks)
4. Who took the author to school? (3 marks)
5. Describe the pathetic condition of pi in the middle of ocean? (3 marks)
6. Richard Parker's survival seemed incredible to pi. Why? (3 marks)
7. Why does the author say that it is important to include a sea recipe in cookery books? (3 marks)
8. Mention the location in which the is a part of civilization?
(3 marks)
9. How does Cooper appear in the tree? (1 mark)
10. How does the poet spend his winter? (3 marks)
11. Why is the Casuarina tree dear to poet's heart?
(2 marks)
12. To whom does the poet want to consecrate the tree's memory? (2 marks)

$$8_{\text{strike}} = (5 \times 5 = 25)$$

EXE 2.2

- Q (101), If $P_1^{x_1} \times P_2^{x_2} \times P_3^{x_3} \times P_4^{x_4} = 113400$ where P_1, P_2, P_3, P_4 are primes in ascending order and x_1, x_2, x_3, x_4 are integers, find the value of P_1, P_2, P_3, P_4 and x_1, x_2, x_3, x_4 .

EXE 2.3

- Q (102), Find the least positive value of x such that

$$(i) 71 \equiv x \pmod{8} \quad (ii) 78 + x \equiv 3 \pmod{5} \quad (iii) 5x \equiv 4 \pmod{6} \\ (iv) 89 \equiv (x+3) \pmod{4} \quad (v) 96 \equiv \frac{x}{4} \pmod{5}$$

EXE 2.4

- Q (103), Find the sum $\left[\frac{a-b}{a+b} + \frac{2a-2b}{a+b} + \frac{3a-3b}{a+b} + \dots + 12 \text{ terms} \right]$

EXE 2.8

- Q (104), If $S_n = (x+y) + (x^2+xy+y^2) + (x^3+x^2y+xy^2+y^3) + \dots$ n terms then prove that $(x-y)S_n = \left[\frac{x^2(x^n-1)}{x-1} - \frac{y^2(y^n-1)}{y-1} \right]$

EXE 2.9

- Q (105), Find the sum of the following series

$$(i) 1+2+3+\dots+60$$

$$(ii) 3+6+9+\dots+96$$

$$(iii) 51+52+53+\dots+92$$

$$(iv) 1+4+9+16+\dots+225$$

$$(v) 6^2+7^2+8^2+\dots+21^2$$

EXE 2.8

- Q (106), Kumar writes a letter to four of his friends. He asks each one of them to copy the letter and mail to four different persons with the instruction that they continue the process similarly. Assuming that the process is unaltered and it costs ₹2 to mail one letter, find the amount spent on postage when 8^{th} set of letters is mailed.

(12)

Chapter 2

MATHS

2. marks : (10 x 2 = 20)

EXA 2.3 (01), Show that the square of an odd integer is of the form $4q+1$, for some integer q .

EXE 2.1 (02), Find the largest number which divides 1230 and 1926 leaving remainder 12 in each case.

EXA 2.8 (03), Can the number 6^n , n being a natural number end with the digit 5? Give reason.

EXE 2.2 (04), Find the least number that is divisible by the first ten natural numbers.

EXE 2.3 (05), Solve $5x \equiv 4 \pmod{6}$

EXA 2.4 (06), Find the number of terms in the A.P. 3, 6, 9, 12, ..., 111

EXE 2.5 (07), The ratio of 6th & 8th term of an A.P is 7:9. Find the ratio of 9th term to 13th term.

EXE 2.6 (08), Find the sum of first 28 terms of an A.P. Whose n^{th} term is $4n-3$.

EXA 2.4 (09), Find the 8th term of the G.P. 9, 3, 1, ...

EXA 2.5 (10), Find the sum to n terms of the series $5+55+555$.

EXE 2.8 (11), Find the rational form of the number $0.\overline{123}$.

EXE 2.7 (12), How many terms of the series $1^3+2^3+3^3+\dots$ should be taken to get the sum 14400?