INDIAN SCHOOL AL WADI AL KABIR

Pre Mid-Term Examination (2025-26)

Class: IX | Sub: MATHEMATICS (041) | Max Marks: 30

Date: 22.05.2025 | Set- II | Time:1 hour

General Instructions:

1. This question paper is divided in to 4 sections- A, B, C and D.
2. Section A comprises of 7 questions of 1 mark each.
3. Section B comprises of 3 questions of 2 marks each.
4. Section C comprises of 3 questions of 3 marks each.
5. Section D comprises of 2 Case based integrated units of assessment (4 marks each) with sub-parts of the values 2, 1 and 1 marks each respectively.
6. All questions are compulsory. However, an internal choice in 1 Q of 2 marks, 1 Q of 3 marks has been provided. An internal choice has been provided in the 2 marks questions of section D.

Section A (MCQ-1 mark each)

Q.1. The simplest rationalizing factor of $\frac{1}{\sqrt{12}}$ is: (1)

A $2\sqrt{3}$ **B** $\sqrt{2}$ **C** $\sqrt{12}$ **D** $\sqrt{3}$

Q.2. The value of $(2^2 + 3^0) \div 5^2$ is: (1)

A 5 **B** $\frac{1}{5}$ **C** $\frac{4}{25}$ **D** 1

Q.3. If $x = 2 + \sqrt{3}$ then value of $\frac{1}{x}$ is: (1)

A $2 + \sqrt{3}$ **B** $2 - \sqrt{3}$ **C** $\sqrt{3} - 2$ **D** 1

Q.4. The value of x such that, if $\left(\frac{11}{9}\right)^6 \div \left(\frac{9}{11}\right)^3 = \left(\frac{11}{9}\right)^{2x-3}$ (1)

A -2 **B** 2 **C** 6 **D** 5

Q.5. Area of an equilateral triangle whose one side 10 cm is: (1)

A $25\sqrt{3}\ cm^2$ **B** $15\ cm^2$ **C** $10\sqrt{3}\ cm^2$ **D** $50\ cm^2$

Q.6. The area of a right triangle with sides13m, 12 m and 5 m is: (1)

A $39\ m^2$ **B** $60m^2$ **C** $30\ m^2$ **D** $65\ m^2$

Q7. **DIRECTION:** A statement of **Assertion (A)** is followed by a statement of **Reason (R).** (1)

Choose the correct option.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A).

(c) Assertion (A) is true but Reason (R) is false.

(d) Assertion (A) is false but Reason (R) is true.

Assertion (A): $\sqrt{5} \div \sqrt{20}$ is an irrational number.

Reason (R): Quotient of non-zero rational number with an irrational number is irrational.

Section B (2 marks each)

Q.8. Simplify: $(2\sqrt{3} - 5\sqrt{2})\,(3\sqrt{2} + 3\sqrt{3})$. (2)

Q.9. a) An isosceles triangle has perimeter 30 cm and each of the equal sides is 12 cm. Find the area of the triangle. (2)

(OR)

b) Find the cost of leveling the ground in the form of a triangle having its side as 70 cm, 50 cm and 60 cm, at ₹ 7 per sq.cm**.**

Q.10. Represent 1.181818……. in the form of $\frac{p}{q}$,where p and q are integers and q ≠0. (2)

Section C (3 marks each)

Q.11. Represent geometrically $\sqrt{5.7}$ on the number line. (3)

Q.12. The sides of a triangular plot are in the ratio of 6: 7: 8 and its perimeter is 420 m. Find its area. (3)

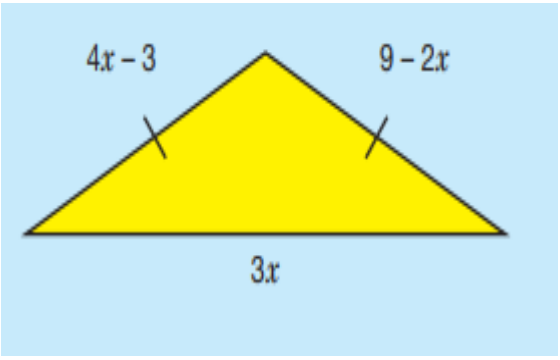
Q.13. a) Simplify: $\left\{7\left[\left(8^{\frac{1}{3}} + 125^{\frac{1}{3}}\right)^{5}\right]\right\}^{\frac{1}{6}}$ (3)

(OR)

b) If x = $3 - 2\sqrt{3}$, find the value of $x^2 + \frac{1}{x^2}$.

Section D (CASE STUDY BASED QUESTIONS – 4 MARKS EACH)

Q.14.



While making a geometrical chart, Harsha found this piece of an isosceles triangle lying on the ground.

The lengths of equal sides are (4x -3) units and (9-2x) units and the length of third side is 3x units.

Based on these information, answer the following:

(i) Find the value of x. (1m)

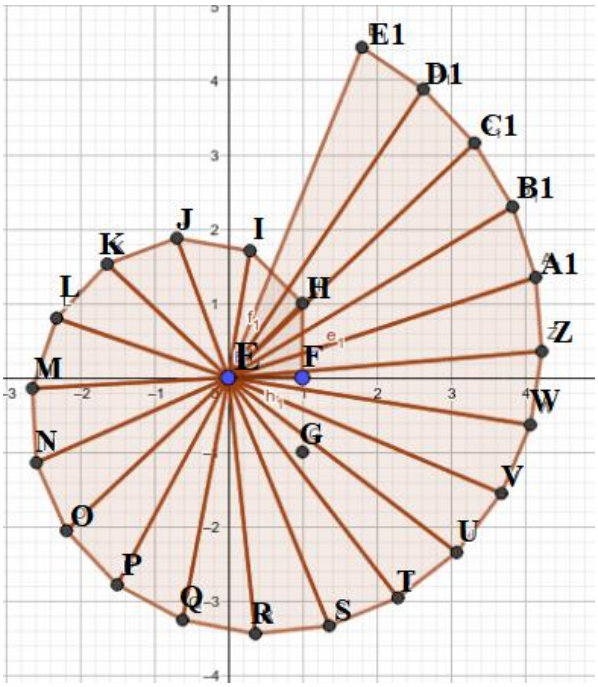
(ii) Calculate the semi perimeter. (1m)

(iii) a) Find the area of the triangular plot. (2m)

-OR-

b) Given: The lengths of sides of a triangle are (4x+3), 9+2x and 5x. What type of triangle will you get, if x= 3? Why?

Q.15. Real numbers are the numbers which include both rational and irrational numbers. Rational numbers are the numbers which can be written in the form $\frac{p}{q}$ Where p and q are integers and $q \neq 0$. Irrational numbers are those numbers which cannot be expressed as a ratio of two integers.



Square root Spiral

Based on the above information, answer the following questions:

(i) In the figure, if EF and FH each have a length of one unit, what number does EH represent? (1)

(ii) Add $3\sqrt{5}$ +$5\sqrt{3}$ and $\sqrt{3}$ -$2\sqrt{5}$ (1)

(iii) (a) Find two irrational numbers between $\frac{5}{8}$ and $\frac{3}{2}$. (2)

-OR-

(b) Locate $\sqrt{2}$ on number line.

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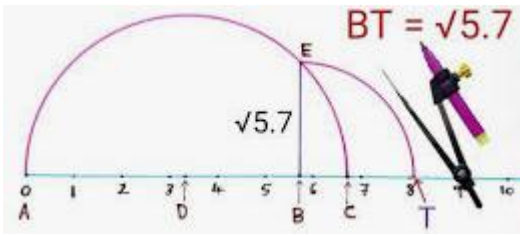
Unit Test – (2025 - 2026)

Answer Key

Class: IX Sub: MATHEMATICS (041) Max Marks: 30

Date: Time: 1 hr

1	(d)$\sqrt{3}$
2	(b) $\frac{1}{5}$
3	(b) 2 - √3
4	(c) 6
5	(a) $25\sqrt{3}$
6	(b)$1000\sqrt{6}\ cm^2$
7	(d) A is false but R is true
8	$6\sqrt{6}$ +18-30-$15\sqrt{6}$ = -12-$9\sqrt{6}$
9	Third side= 30-24=6cm Semi-perimeter =30/2 =15cm Area=$\sqrt{15 \times 3 \times 3 \times 9}$ =$9\sqrt{15}\ cm^2$ OR S=(70+60+50)÷2 =90 Area=$\sqrt{90 \times 20 \times 30 \times 40}$ =$600\sqrt{6}cm^2$ Total cost=₹$4200\sqrt{6}$
10	Let x=1.1818… 100x=118.1818.. 100x-x =117

	99x=117 X=$\frac{13}{11}$
11	
12	6x+7x+8x=420 x=20 and S=210 Area=$\sqrt{210 \times 90 \times 70 \times 50}$ =2100$\sqrt{15}\ m^2$
13	$7\times (2+5)^5=7^6$ $(7^6)^{\frac{1}{6}}=7^1=7$ OR $x^2 = (3 + 2\sqrt{2})^2 = 9 + 12\sqrt{2} + 8 = 17 + 12\sqrt{2}$ $\frac{1}{x^2} = (3 - 2\sqrt{2})^2 = 9 - 12\sqrt{2} + 8 = 17 - 12\sqrt{2}$ $x^2 + \frac{1}{x^2} = 17 + 12\sqrt{2} + 17 - 12\sqrt{2}$ $= 34$ $\therefore x^2 + \frac{1}{x^2} = 34$
14	(i)4x-3 = 9-2x 6x = 12 X=2 (ii)The sides are 5,5,6 S=8 unit (iii)Area=$\sqrt{8 \times 3 \times 3 \times 2}$ =12$unit^2$ OR Cost of painting=100× 12 =₹1200
15	(i)$\sqrt{5}$ +6$\sqrt{3}$

(ii) $\frac{5}{8}$ =0.625 and $\frac{3}{2} = 1.5$

0.800800080000800… and 1.010010001… are two irrational number between them.

(iii)