

Bhavan's Tripura Vidyamandir

1ST Periodic Assessment - (2024-2025)

Class:-9

Time: - 2 Hours

Name of the student:

Subject: Mathematics

Total: - 50 Marks

Roll : Section:

General Instruction:

- **Section A** contains 10 questions (1 to 10) each carries 1 marks.
- **Section B** contains 5 questions (11 to 15) each carries 2 marks.
- **Section C** contains 4 questions (16 to 19) each carries 3 marks.
- **Section D** contains 2 questions (20 to 21) each carries 5 marks.
- **Section E** contains 2 case-study (22 to 23) each carries 4 marks.

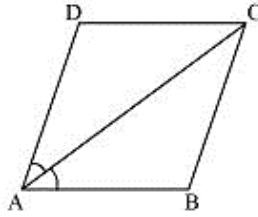
SECTION - A

1. In a frequency distribution, the mid value of a class is 15 and the class interval is 4. The lower limit of the class is
a) 13 b) 14 c) 16 d) 17
2. One angle is equal to three times its supplement. The measure of the angle is
a) 130° b) 125° c) 135° d) 140°
3. If the diagonals of a rhombus are 18 cm and 24 cm respectively, then its side is equal to
a) 14cm b) 15 cm c) 16 cm d) 17 cm
4. Axiom and postulates are
a) Conclusions b) Reasons c) Assumptions d) Questions
5. Decimal representation of a rational number cannot be
a) Terminating b) always non – terminating
c) Non – terminating non – repeating d) none of these
6. 'Lines are parallel if they do not intersect' – is stated in the form of:
a) A postulate b) An axiom c) A definition d) A proof
7. The product of a rational and an irrational numbers is:
a) Always an integer b) Always an irrational number
c) Always a rational number d) Sometimes rational and sometimes irrational
8. The figure formed by joining the mid-points of the adjacent sides of a rectangle is a
a) square b) rhombus c) trapezium d) kite
9. If two interior angles on the same side of a transversal intersecting two parallel lines are in the ratio 2:3, then the measure of the larger angle is
a) 36° b) 72° c) 108° d) 136°
10. A frequency polygon is constructed by plotting frequency of the class interval and the
a) upper limit of the class b) lower limit of the class
c) mid value of the class d) any values of the class

SECTION - B

11. If A, B and C are three points on a line, and B lies between A and C then prove that $AB + BC = AC$. Explain by drawing the figure.
12. Write $\frac{5}{13}$ in decimal form and say what kind of decimal expansion has.
13. Prove that, if two lines intersect each other, then the vertically opposite angles are equal. Explain by drawing the figure.

14. Diagonal AC of a parallelogram ABCD bisects $\angle A$. Show that, it bisects $\angle C$ also.

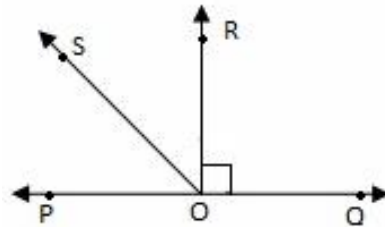


15. Express the decimal $2.\overline{93}$ in the form $\frac{p}{q}$, where p, q are integers and $q \neq 0$

SECTION - C

16. Find three different irrational numbers between the rational numbers $\frac{5}{7}$ and $\frac{9}{11}$.

17. In the given figure, POQ is a line. Ray OR is perpendicular to line PQ. OS is another ray lying between rays OP and OR. Prove that, $\angle ROS = \frac{1}{2}(\angle QOS - \angle POS)$.



18. 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 the figure.

19. The length of 40 leaves of a plant are measured correct to one millimetre, and the obtained data is represented in the following table:

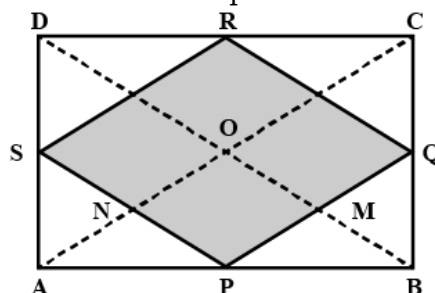
Length (in mm)	Number of leaves
118 - 126	3
127 - 135	5
136 - 144	9
145 - 153	12
154 - 162	5
163 - 171	6

Draw a histogram to represent the given data

SECTION - D

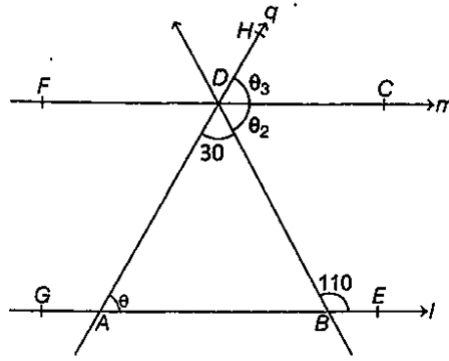
20. If $x = \frac{1}{2-\sqrt{3}}$, find the value of $x^3 - 2x^2 - 7x + 5$.

21. The midpoints of the sides AB, BC, CD, and DA of a quadrilateral ABCD are joined to form a quadrilateral. If $AC = BD$ and $AC \perp BD$ then prove that the quadrilateral formed is a square.



SECTION - E

22. In Game period, the teacher of Public School decided to play the puzzle game. For this game, firstly the teacher draws a geometrical figure on the ground, which is shown as below.



Here, the l is parallel to m and q is a transversal line. While drawing this figure, the teacher has no scale for measuring this length. But they know the side which is opposite of the smallest angle, is smaller and the side which is opposite to the largest angle, is larger. In this game, the teacher invites the two students Vicky and Vishal and said them that Vicky stands on point A and Vishal stands on point B, respectively (Assume that both have same space of walking). Based on the above information, answer the following questions.

- i) What is the degree measure of θ_1 ?
- ii) What is the degree measure of θ_2 ?
- iii) What is the relation between θ_1 and θ_3 ?

23. The COVID-19 pandemic, also known as the coronavirus pandemic, is an on-going pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in December 2019 in Wuhan, China. During survey, the ages of 80 patients infected by COVID and admitted in the one of the City hospital were recorded and the collected data is represented in the frequency distribution table.

Age (in years)	Number of patients
5 – 15	6
15 – 25	11
25 – 35	21
35 – 45	23
45 – 55	15
55 – 65	5

Based on the above information, answer the following questions.

- i) Which class interval has the highest frequency?
- ii) Which age group was affected the least?
- iii) How many patients of the age more than 15 and less than 55 were admitted?