PRACTICE PAPER 1

Mathematics Class 9th (Term I)

Instructions

1. This paper has 40 questions.
2. All questions are compulsory.
3. Each question carry 1 mark.
4. Answer the questions as per given instructions.

Time : 90 Minutes   **Max. Marks : 40**
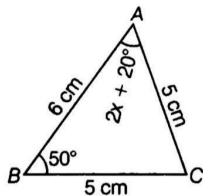
Multiple Choice Questions

1. The value of

$$\left(\frac{x^a}{x^b}\right)^{a+b} \cdot \left(\frac{x^b}{x^c}\right)^{b+c} \cdot \left(\frac{x^c}{x^a}\right)^{c+a} \text{ is}$$

(a) 0
(b) 1
(c) x
(d) None of the above
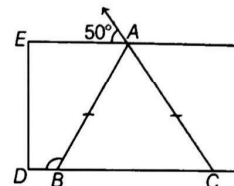
2. In the given figure, the measure of $\angle BAC$ is

(a) 60°   (b) 50°
(c) 70°   (d) 80°

3. The rationalising factor of $\sqrt[7]{a^4 b^3 c^5}$ is

(a) $\sqrt[7]{a^3 b^3 c^2}$
(b) $\sqrt[7]{a^3 b^4 c^2}$
(c) $\sqrt[7]{a^2 b^3 c^3}$
(d) $\sqrt[7]{a^2 b^4 c^3}$

4. In figure, if $AE \| DC$ and $AB = AC$, then value of $\angle ABD$ is

(a) 130°   (b) 110°
(c) 120°   (d) 70°
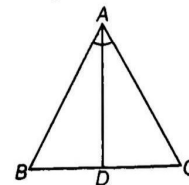
5. If the number $x = 1.242424\ldots$ can be expressed in the form of $x = \dfrac{p}{q}$, where p and q are positive integers having no common factor. Then, the value of $(p + q)$ is

(a) 72   (b) 74
(c) 53   (d) 41

6. If AD is bisector of $\angle A$ and $\angle D$ is perpendicular to BC. Then, $\triangle ABC$ is .... triangle

(a) Scalene   (b) Equilateral
(c) Isosceles   (d) None of these

7. If the area of an equilateral triangle is $16\sqrt{3}$ cm^2, then the perimeter of the triangle is
   (a) 148 cm   (b) 24 cm
   (c) 12 cm   (d) 36 cm

8. The maximum temperatures (in degree celcius) for a city in North India for the month of June 2000, as reported by meteorological department are as below

   32.4, 30.3, 31.6, 32.5, 33.5, 28.7, 33.4, 35.6, 36.4, 34.7, 35.2, 30.6, 28.5, 29.4, 30.3, 32.5, 34.6, 35.4, 36.1, 37.2, 28.5, 28.1, 29.2, 31.4, 32.5, 36.2, 35.9, 36.7, 37.2, 36.1, then range is
   (a) 28.1°C   (b) 37.2°C
   (c) 9.1°C   (d) 28.5°C

9. The edges of a triangular board are 6 cm, 8 cm and 10 cm. The cost of painting it at the rate of 9 paise per cm^2 is
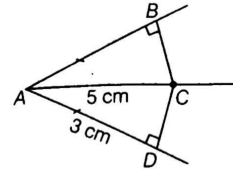   (a) ₹ 2.00   (b) ₹ 2.16
   (c) ₹ 2.48   (d) ₹ 3.00

10. The marks obtained by 12 students of a class in a test are 36, 27, 5, 19, 34, 23, 37, 23, 16, 23, 20, 38. Then mode is equal to
    (a) 23   (b) 26
    (c) 20   (d) 36

11. The value of $\dfrac{3}{5-\sqrt{3}} + \dfrac{2}{5+\sqrt{3}}$ is
    (a) $\dfrac{\sqrt{28}}{22}$ (b) $\dfrac{\sqrt{28}}{28}$
    (c) $\dfrac{25+\sqrt{3}}{22}$ (d) $\dfrac{\sqrt{25}+\sqrt{3}}{22}$

12. In the given figure, if AC is bisector of $\angle BAD$ such that $AD = 3$ cm, $AC = 3$ cm and $AC = 5$ cm, then the value of $CD + BC$ is
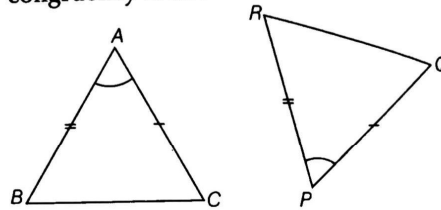

    (a) 4 cm   (b) 6 cm
    (c) 8 cm   (d) 5 cm

13. The product of a rational number and its reciprocal is
    (a) 0   (b) 1
    (c) −1   (d) None of these

14. Which of the following criteria of congruency is shown?

    (a) ASA   (b) SSS
    (c) SAS   (d) None of these

15. The base of a right triangle is 48 cm and its hypotenus is 50 cm. The area of the triangle is
    (a) 168 cm^2 (b) 252 cm^2
    (c) 336 cm^2 (d) 504 cm^2

16. The mean of the marks scored by 40 students was found to be 35. Later on it was discovered that a score of 43 was misread as 34. Then correct mean is
    (a) 35.2   (b) 39.4
    (c) 39.8   (d) 39.2

17. An isosceles right triangle has area 8 cm^2. Then length of its hypotenuse is
    (a) $\sqrt{32}$ cm   (b) $\sqrt{16}$ cm
    (c) $\sqrt{48}$ cm   (d) $\sqrt{24}$ cm

18. The range of the data 15, 20, 6, 5, 30, 35, 92, 35, 90, 18, 82 is
    (a) 87   (b) 15
    (c) 18   (d) 26

19. The sides of a triangle are 35 cm, 54 cm and 61 cm. The length of its longest altitude is
    (a) $16\sqrt{5}$ cm
    (b) $10\sqrt{5}$ cm
    (c) $24\sqrt{5}$
    (d) 28 cm

20. If the mean of five observations $x, x + 4, x + 8, x + 12$ and $x + 16$ is 15, then the value of x is
    (a) 5
    (b) 6
    (c) 7
    (d) 8

Assertion-Reasoning MCQs

For question numbers 21 to 25, two statements are given-one labelled **Assertion** (A) and the other labelled **Reason** (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.
   (a) Both A and R are true and R is the correct explanation of A.
   (b) Both A and R are true but R is not the correct explanation of A.
   (c) A is true but R is false.
   (d) A is false and R is true.

21. **Assertion** If the mean of five observations $x, x + 2, x + 4, x + 6, x + 8$ is 11, then mean of last three observation is 8.

    Reason Range = Maximum value
    $\qquad\qquad$ − Minimum value.

22. **Assertion** Sum of two irrational numbers $3 + \sqrt{5}$ and $4 + \sqrt{5}$ is irrational number.

    Reason Sum of two irrational number is always on irrational number.

23. **Assertion** In $\triangle ABC$ and $\triangle XYZ$, $AB = XY$, $AC = XZ$ and $\angle BAC = \angle YXZ$
    $\therefore \triangle ABC \cong \triangle XYZ$.

    Reason Both the triangles are congruent by SSS congruence.

24. **Assertion** The point $(2, 2)$ is the solution of $x + y = 4$.

    Reason Every point which satisfy the linear equation is a solution of the equation.

25. **Assertion** The height of the triangle is 18 cm and its area is 72 cm^2, then base of the triangle is 8 cm.
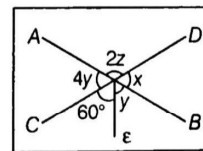
    Reason Area of triangle
    $$= \frac{1}{2} \times \text{base} \times \text{height}$$

Case Based MCQs

Direction Answer the questions from 26-30 based on the following case.

Match teacher draws a straight in AB shown on the black board as per the following figure

- Now, he told Raju to draw another line CD as in the figure
- The teacher told Ajay to mark $\angle AOD$ as $2z$
- Suraj was told to mark $\angle AOC$ as $4y$
- Clive made and angle $\angle COE = 60°$
- Peter marked $\angle BOE$ and $\angle BOD$ as y and x respectively.

Now, answer the following question.

26. What is the value of x
    (a) 48°
    (b) 96°
    (c) 100°
    (d) 120°

27. What is the value of y ?
    (a) 48°
    (b) 96°
    (c) 100°
    (d) 24°

28. What is the value of z
    (a) 48°
    (b) 96°
    (c) 42°
    (d) 120°

29. What should be the value of $x + 2z$?

(a) 148°   (b) 360°

(c) 180°   (d) 120°

30. What is the relation between y and z?

(a) $2y + z = 90°$ (b) $2y + z = 180°$

(c) $4y + 12z = 120°$ (d) $y = 2z$

Direction Answer the questions from 31-35 based on the following case.

A car parking is a major problem in urban areas in both developed and developing countries. In the Jaipur city GT mall is shopping place charged the parking charges of a car in a parking lot is ₹ 30 for the first two hours and ₹ 10 per hour for subsequent hours, then answer the following questions.

31. Taking total parking time to be x hour, and total charges as ₹ y, write a linear equation

(a) $10x + y - 10 = 0$ (b) $10x - y + 10 = 0$

(c) $8x + y - 10 = 0$ (d) $8x - y + 10 = 6$

32. If $y = 20$, then value of x

(a) 1   (b) 2

(c) 3   (d) 4

33. If $x = 2$, then value of y is

(a) 10   (b) 20

(c) 30   (d) 40

34. If charges of a car in a parking lot is ₹ 50 for the first two hours, then expression of the linear equation is
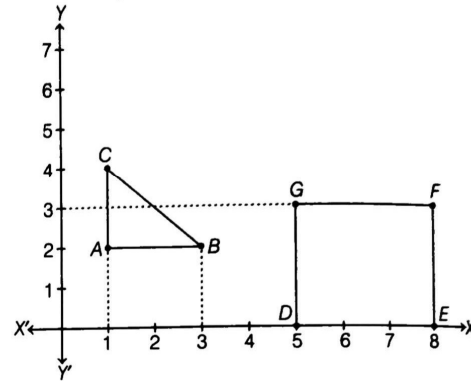
(a) $10x - y + 30 = 0$ (b) $10x + y + 30 = 0$

(c) $10x + y - 30 = 0$ (d) $30x + y - 10 = 0$

35. If charges for subsequent hours is ₹ 8 per hour, then write linear equation

(a) $10x - y + 8 = 0$ (b) $10x - y + 10 = 0$

(c) $8x - y + 14 = 0$ (d) $8x - y + 8 = 0$

Direction Answer the questions from 36-40 based on the following case.

In a society, residence decide to build a park for children and a parking area. $\triangle ABC$ shows the park and $DEFG$ show the parking as shown below

Now, answer the following questions.

36. The coordinates of A is

(a) (1, 2)   (b) (2, 1)

(c) (1, 1)   (d) (2, 2)

37. The coordinates of D is

(a) (0, 1)   (b) (1, 3)

(c) (5, 0)   (d) (0, 5)

38. The coordinates of F is

(a) (3, 8)   (b) (8, 3)

(c) (3, 0)   (d) (0, 8)

39. Area of the park is (in sq unit)

(a) 1   (b) 2

(c) 3   (d) 4

40. Area of the parking is (in sq unit)

(a) 2   (b) 8

(c) 9   (d) 6

PRACTICE PAPER 1

OMRSHEET

Instructions
- Use black or blue ball point pens and avoid gel pens and fountain pens for filling the sheets
- Darken the bubbles completely. Don't put a tick mark or a cross mark half-filled or over-filled bubbles will not be read by the software.

✓ Incorrect   ✗ Incorrect   ◑ Incorrect   ● Correct

- Do not write anything on the OMR Sheet
- Multiple markings are invalid

1	ⓐ	ⓑ	ⓒ	ⓓ		**21**	ⓐ	ⓑ	ⓒ	ⓓ
2	ⓐ	ⓑ	ⓒ	ⓓ		**22**	ⓐ	ⓑ	ⓒ	ⓓ
3	ⓐ	ⓑ	ⓒ	ⓓ		**23**	ⓐ	ⓑ	ⓒ	ⓓ
4	ⓐ	ⓑ	ⓒ	ⓓ		**24**	ⓐ	ⓑ	ⓒ	ⓓ
5	ⓐ	ⓑ	ⓒ	ⓓ		**25**	ⓐ	ⓑ	ⓒ	ⓓ
6	ⓐ	ⓑ	ⓒ	ⓓ		**26**	ⓐ	ⓑ	ⓒ	ⓓ
7	ⓐ	ⓑ	ⓒ	ⓓ		**27**	ⓐ	ⓑ	ⓒ	ⓓ
8	ⓐ	ⓑ	ⓒ	ⓓ		**28**	ⓐ	ⓑ	ⓒ	ⓓ
9	ⓐ	ⓑ	ⓒ	ⓓ		**29**	ⓐ	ⓑ	ⓒ	ⓓ
10	ⓐ	ⓑ	ⓒ	ⓓ		**30**	ⓐ	ⓑ	ⓒ	ⓓ
11	ⓐ	ⓑ	ⓒ	ⓓ		**31**	ⓐ	ⓑ	ⓒ	ⓓ
12	ⓐ	ⓑ	ⓒ	ⓓ		**32**	ⓐ	ⓑ	ⓒ	ⓓ
13	ⓐ	ⓑ	ⓒ	ⓓ		**33**	ⓐ	ⓑ	ⓒ	ⓓ
14	ⓐ	ⓑ	ⓒ	ⓓ		**34**	ⓐ	ⓑ	ⓒ	ⓓ
15	ⓐ	ⓑ	ⓒ	ⓓ		**35**	ⓐ	ⓑ	ⓒ	ⓓ
16	ⓐ	ⓑ	ⓒ	ⓓ		**36**	ⓐ	ⓑ	ⓒ	ⓓ
17	ⓐ	ⓑ	ⓒ	ⓓ		**37**	ⓐ	ⓑ	ⓒ	ⓓ
18	ⓐ	ⓑ	ⓒ	ⓓ		**38**	ⓐ	ⓑ	ⓒ	ⓓ
19	ⓐ	ⓑ	ⓒ	ⓓ		**39**	ⓐ	ⓑ	ⓒ	ⓓ
20	ⓐ	ⓑ	ⓒ	ⓓ		**40**	ⓐ	ⓑ	ⓒ	ⓓ

Students should not write anything below this line

SIGNATURE OF EXAMINER WITH DATE	**MARKS SCORED**