

CBSE Sample Paper Class 9 Maths SA2 Set 3

SUMMATIVE ASSESSMENT II SAMPLE PAPER MATHEMATICS

Class: IX

Time: 3- 3 ½ hours

M.Marks: 80

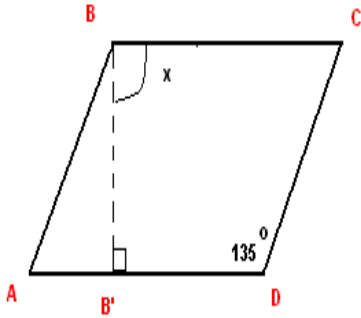
General Instructions:

1. All questions are compulsory
 2. The question paper consists of 34 questions divided into 4 sections A ,B ,C and D. Section A comprises of 10 questions of 1 mark each. Section B comprises of 8 questions of 2 marks each. Section C comprises of 10 questions of 3 marks each. And Section D comprises of 6 questions of 4 marks each.
 3. Question numbered from 1 to 10 in Section A are multiple choice questions where you have to select one correct option out of the given four.
 4. There is no overall choice. However, an internal choice has been provided in 1 question of two marks, 3 questions of three marks each and 2 questions of four marks each. You have to attempt only one of the alternatives in all such questions. .
 5. Write the serial number of the question before attempting it.
 6. Use of calculators is not permitted.
 7. An additional 15 minutes time has been allotted to read this question paper only.
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SECTION – A

1. If the dimensions of a cuboid are 3 cm, 4 cm and 10 cm, then its surface area is
A. 82 cm^2 B. 123 cm^2 C. 164 cm^2 D. 216 cm^2
2. The circumference of the base of a cylindrical vessel is 132 cm and its height is 25 cm. The lateral surface area of the cylinder is
A. 3300 cm^2 B. 3465 cm^2 C. 3450 cm^2 D. 6930 cm^2
3. The measure of angle x in the given figure is

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- A. 45° B. 90° C. 135° D. 30°
4. In a parallelogram ABCD angle A is $3x - 2$ and angle C is $2x + 23$. Then, the measure of angle A is
A. 73° B. 75° C. 85° D. 90°
5. If diagonals of a quadrilateral are the diameters of a circle I, then quadrilateral is a
A. parallelogram B. square C. rectangle D. cyclic quadrilateral
6. The dimensions of a rectangular box are in the ratio 2:3:4 and its surface area is 1300cm^2 Its shortest edge is
A. 10cm B. 25 cm C. 20cm D. 15 cm
7. The class mark of a class is 10 and its class width is 6. The lower limit of the class is
A. 5 B. 7 C. 8 D. 10
8. Find the solution to $x + 2 = 5$.
A. 3 B. -3 and 7 C. 3 and -7 D. -3 and -7
9. Through three non collinear points on a plane , the number of circles that can be drawn are
A. One B. two C. three D. Infinite
10. A diagonal of a parallelogram divides it into two
A. triangles B. congruent triangles C. similar triangles D. parallelograms

SECTION - B

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11. Verify that $(0, \sqrt{3})$ is a solution of $\frac{x}{\sqrt{3}} + y = \sqrt{3}$

12. Sanjeev bought 18 apples for Rs 45 and 12 oranges for Rs 25. Form a linear equation in two variables from above statement.

OR

A person on tour has Rs. 360 for his daily expenses. If he exceeds his tour programme by 4 days, he must cut down his daily expense by Rs.3 per day. Form a linear equation in two variables from the above statement.

13. Draw the graph of the linear equation $y = 2x - 2x + 2$

14. Find the unknown entries (A, B, C, D and E) from the following frequency distribution of heights of 50 students.

Class Interval (Height in cm)	Frequency	Cumulative Frequency
150 - 155	12	A
155 - 160	B	25
160 - 165	10	C
165 - 170	D	43
170 - 175	5	48
175 - 180	2	50
Total	E	

15. Given below are results of a CWG poll about corruption

Opinion	Number of people
agree	15
Strongly agree	30
Somewhat agree	15
disagree	20
Somewhat disagree	10
Strongly disagree	5
Not sure	5

Find the probability of the next person asked will not strongly agree.

16. What is the probability of choosing the alphabet "n" from the word "morning"?

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17. ABCD is a parallelogram in which P, Q, R and S are the mid points of the sides AB, BC, CD and DA respectively. AC is a diagonal, show that PQRS is a parallelogram.

18. Construct an angle of 105° . Write the Steps of Construction.

SECTION - C

19. Find the volume, curved surface and total surface area of a cone with the given radius 3 m and height 4 m.

OR

The curved surface area (CSA) of the cone is 814 sq. cm and the total surface area (TSA) of the cone is 1584 sq.cm. Find its volume.

20. Three coins are tossed simultaneously 250 times with the following frequencies of different out comes.

Outcome	No heads	1 head	2 heads	3 heads
Frequency	45	75	79	51

If these coins are tossed again what is the probability of getting 2 heads?

21. The sum of the 10% of one number and 20% of the other number is equal to the 5 more than the 15% of the sum of two numbers. Write a linear equation in two variables to represent above statement.

22. Show that if the diagonals of a quadrilateral are equal and bisect each other at right angles, then it is a square.

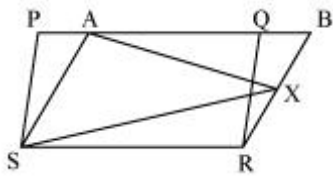
OR

Prove that the quadrilateral formed (if possible) by the internal angle bisectors of any quadrilateral is cyclic.

23. Show that the line segments joining the mid-points of the opposite sides of a quadrilateral bisect each other.

24. In the given figure, PQRS and ABRS are parallelograms and X is any point on side BR. Show that $\text{area}(\triangle PXS) = \frac{1}{2} \text{area}(\text{PQRS})$

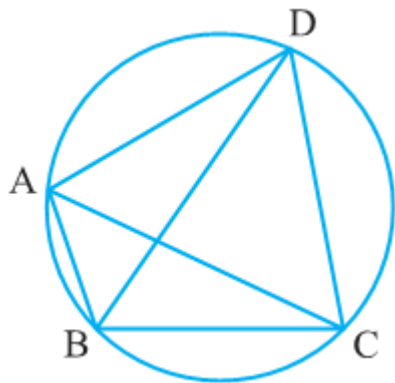
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25. A chord of a circle is equal to the radius of the circle. Find the angle subtended by the chord at a point on the minor arc and also at a point on the major arc.

OR

In the given figure, ABCD is a cyclic quadrilateral in which AC and BD are its diagonals. If $\angle DBC = 55^\circ$ and $\angle BAC = 45^\circ$, find $\angle BCD$.



26. Find the volume and total surface area of the cylinder with a radius of 5 cm and height of 9 cm. (Use $\pi = 3.14$)

27. Arun wanted to make a temporary shelter for her car, by making a box-like structure with tarpaulin that covers all the four sides and the top of the car (with the front face as a flap which can be rolled up). Assuming that the stitching margins are very small, and therefore negligible, how much tarpaulin would be required to make the shelter of height 2.5 m, with base dimensions 4 m \times 3 m?

28. Find the surface area to volume ratio of Sphere if the radius of the given is 5 meter. (Use $\pi = 3.14$)

SECTION - D

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29. Draw a histogram of the following frequency table.

Weekly (Income in Rs.)	200-299	300-399	400-499	500-599	600-699	700-799
Number of Workers	24	57	83	31	10	5

30. A bag contains a black, a red ball and a green ball, all the balls are identical in shape and size. Achal takes out a ball from the bag, without looking into it. What is the probability that the ball drawn is (i) red ball? (ii) black ball? (iii) green ball? (iv) Sum of the three probabilities found in parts (i), (ii) and (iii)

OR

A die is thrown 1000 times with the frequencies for the outcomes 1, 2, 3, 4, 5 and 6 as given in the following table :

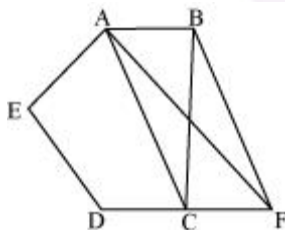
Outcome	1	2	3	4	5	6
Frequency	179	150	157	149	175	190

Let E_i denote the event of getting the outcome i , where $i = 1, 2, 3, 4, 5, 6$

Show that $P(E_1) + P(E_2) + P(E_3) + P(E_4) + P(E_5) + P(E_6) = 1$

31. Prove that: A diagonal of a parallelogram divides it into two congruent triangles.

32. In the given figure, ABCDE is a pentagon. A line through B parallel to AC meets DC produced at F. Show that area (AEDF) = ar (ABCDE)



33. Two circles of radii 5 cm and 3 cm intersect at two points and the distance between their centres is 4 cm. Find the length of the common chord.

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34. Two water taps together fill a tank in $9\frac{3}{8}$ hours. The tap of larger diameter takes 10 hours less than the smaller one to fill the tank separately. Find the time in which each tap can separately fill the tank. Represent this as an equation. What is the degree of that equation?

OR

On the same set of axes draw the graph of the lines given in the equations:

$2x-3y+7=0$; $2x-3y-9=0$. What relationship do you find exists between the two lines . Make a generalization of that relation.

