



Class - IX  
Math  
Term -1  
(2021-22)

Time: 90 Minutes

Max. Marks 40

**General Instructions:**

1. The question paper contains three parts A, B and C
2. Section A consists of 20 questions of 1 mark each. Any 16 questions are to be attempted
3. Section B consists of 20 questions of 1 mark each. Any 16 questions are to be attempted
4. Section C consists of 10 questions based on two Case Studies. Attempt any 8 questions.
5. There is no negative marking.

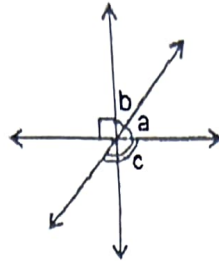
**SECTION A**

Section A consists of 20 questions of 1 mark each. Any 16 questions are to be attempted

1. Find the value of  $\sqrt[3]{\frac{54}{250}}$  (1)  
a)  $9/25$  b)  $3/5$   
c)  $17/125$  d)  $\frac{3\sqrt{5}}{5}$
2. The simplified value of  $(16)^{-1/4} \times \sqrt[4]{16}$  is \_\_\_\_\_ (1)  
a) 16 b) 4  
c) 1 d) 0
3. The points  $(-5, 2)$  and  $(2, -5)$  lie in \_\_\_\_\_ (1)  
a) same quadrant b) II and III quadrant respectively.  
c) II and IV quadrant respectively. d) I and IV quadrant respectively.
4.  $0.12\bar{3}$  can be expressed in rational form as \_\_\_\_\_ (1)  
a)  $900/111$  b)  $111/900$   
c)  $125/10$  d)  $123/90$
5. If  $x = 2 - \sqrt{3}$ , then the values of  $x^2 + \frac{1}{x^2}$  and  $x^2 - \frac{1}{x^2}$  respectively are \_\_\_\_\_ (1)  
a)  $14, 8\sqrt{3}$  b)  $14, -8\sqrt{3}$   
c)  $-14, -8\sqrt{3}$  d)  $-14, 8\sqrt{3}$



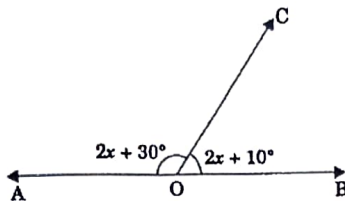
In the given figure, if the angles 'a' and 'b' are in the ratio 2 : 3, then angle 'c' is \_\_\_\_\_ . (1)



- a)   $90^\circ$   
 c)  $144^\circ$

- b)  $126^\circ$   
 d)  $113^\circ$

14. In the given figure, if AOB is a straight line, then  $\angle BOC$  is \_\_\_\_\_ . (1)



- a)  $80^\circ$   
 c)  $60^\circ$

- b)  $70^\circ$   
 d)   $20^\circ$

15. If E and F are the midpoints of equal sides AB and AC of a triangle ABC, then \_\_\_\_\_. (1)

- a)  $BF=AC$   
 c)  $CE=AB$

- b)  $BF=AF$   
 d)   $BF=CE$

16. If the supplement of an angle is 4 times its complement, then the angle is of measure \_\_\_\_\_. (1)

- a)  $60^\circ$   
 c)   $80^\circ$

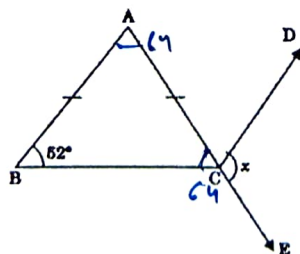
- b)  $50^\circ$   
 d)  $110^\circ$

17. In triangle ABC,  $AB=AC$  and  $\angle B=50^\circ$  then  $\angle A$  is \_\_\_\_\_. (1)

- a)  $50^\circ$   
 c)  $100^\circ$

- b)  $80^\circ$   
 d)  $130^\circ$

18. In the given figure, ABC is an isosceles triangle whose side AC is produced to E and through C. CD is drawn parallel to BA. Then the value of 'x' is \_\_\_\_\_. (1)



- a)  $52^\circ$   
 c)  $104^\circ$

- b)  $156^\circ$   
 d)  $76^\circ$

19. The sum of  $0.\overline{3}$  and  $0.\overline{2}$  is \_\_\_\_\_.

- a)  $5/99$
- c)  $5/10$

- b)  $5/9$
- d)  $5/100$

20. The diagonals of the rectangle ABCD intersect at O. If  $\angle COD = 78^\circ$ , then  $\angle OAB$  is \_\_\_\_\_. (1)

- a)  $35^\circ$
- c)  $70^\circ$

- b)  $51^\circ$
- d)  $110^\circ$

### SECTION B

*Section B consists of 20 questions of 1 mark each. Any 16 questions are to be attempted.*

21. The value of y at  $x = -1$  in the equation  $5y = 2$  is \_\_\_\_\_. (1)

- a)  $5/2$
- c) 10

- ~~b)  $2/5$~~
- d) 0

22.  $x = 3$  and  $y = -2$  is a solution of the equation  $4px - 3y = 12$ , then the value of p is \_\_\_\_\_. (1)

- a) 0
- c) 2

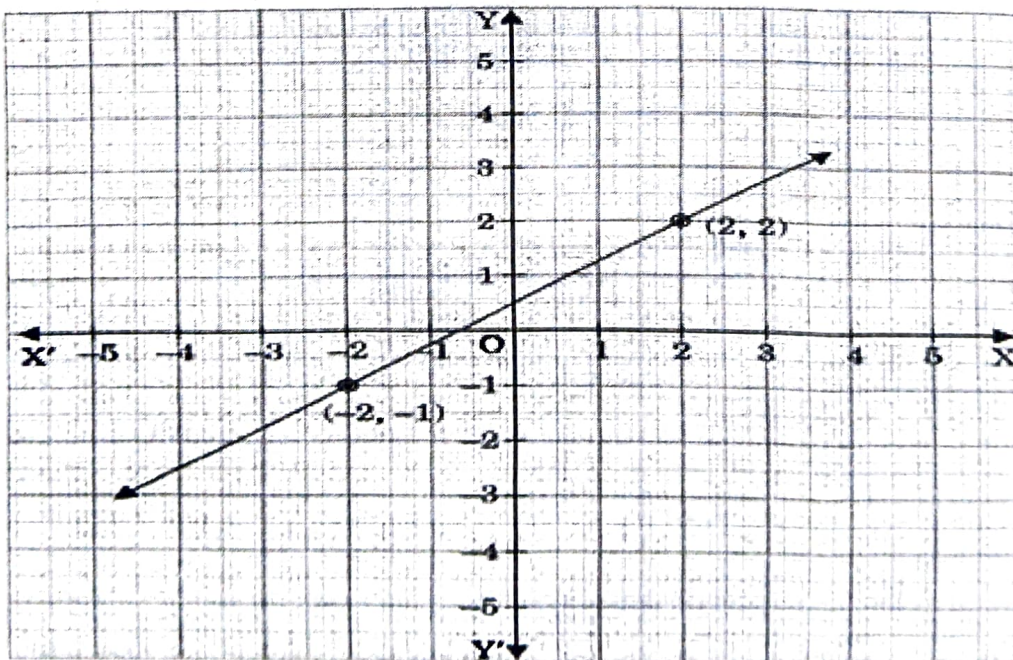
- ~~b)  $1/2$~~
- d) 3

23. Any point on the line  $y = 3x$  is of the form \_\_\_\_\_.

- ~~a)  $(a, 3a)$~~
- c)  $(a, a/3)$

- b)  $(3a, a)$
- d)  $(a/3, -a)$

24. Which equation is represented by the following graph? (1)



- a)  $3x - 7y = 10$
- c)  $8y - 6x = 4$

- b)  $y - 2x = 3$
- d)  $5x + 35/2 y = 25$



31. An isosceles right triangle has area  $8 \text{ cm}^2$ . The length of its hypotenuse is \_\_\_\_\_.

a)  $\sqrt{32} \text{ cm}$

b)  $\sqrt{16} \text{ cm}$

c)  $\sqrt{48} \text{ cm}$

d)  $\sqrt{24} \text{ cm}$

32. The area of an equilateral triangle with side  $2\sqrt{3} \text{ cm}$  is \_\_\_\_\_.

(1)

a)  $5.196 \text{ cm}^2$

b)  $0.866 \text{ cm}^2$

c)  $3.496 \text{ cm}^2$

d)  $1.732 \text{ cm}^2$

33. The range of the given data

(1)

25, 81, 20, 22, 16, 6, 17, 15, 12, 30, 32, 10, 91, 8, 11, 20 is \_\_\_\_\_

a) 10

b) 75

c) 85

d) 26

34. In the class intervals 10-20, 20-30, the number 20 is included in \_\_\_\_\_.

(1)

a) 10-20

b) 20-30

c) both the intervals

d) none of these intervals

35. The width of each of five continuous classes in a frequency distribution is 5 and the lower class-limit of the lowest class is 10. The lower class-limit of the highest class is \_\_\_\_\_.

(1)

a) 15

b) 30

c) 35

d) 40

36. From the table give below, how many students weigh equal to or more than 55kg?

(1)

Weight(kg)	Students
40-45	4
45-50	12
50-55	3
55-60	2
60-65	3
65-70	1
<b>Total</b>	<b>25</b>

a) 2

b) 3

c) 20

d) 6



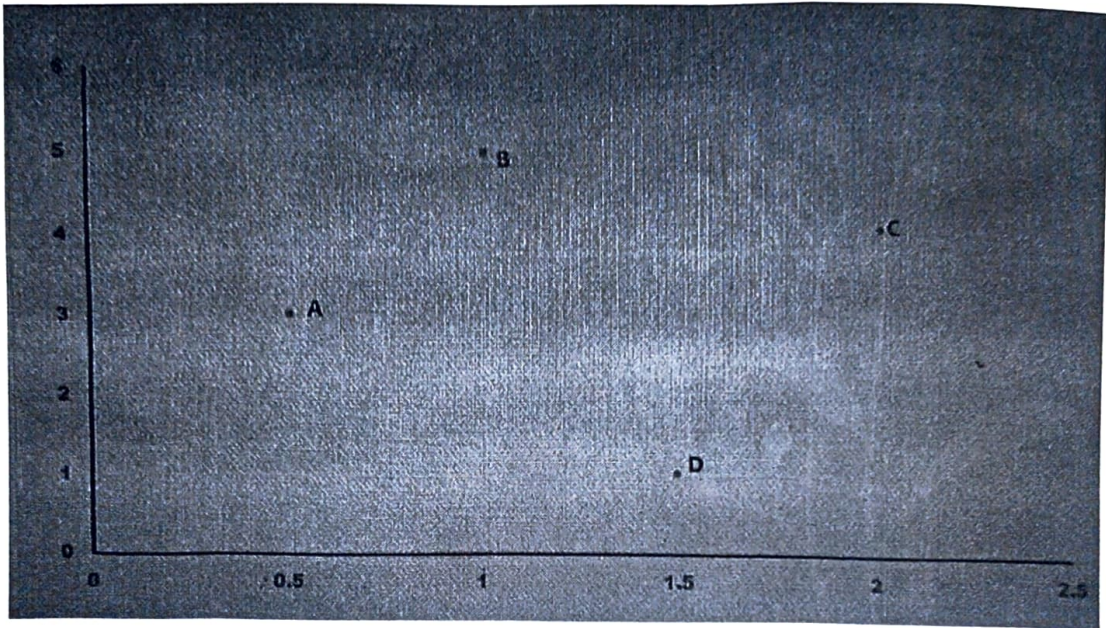
## Section C

### Case study based questions

Section C consists of 10 questions of 1 mark each. Any 8 questions are to be attempted.

#### Case Study 1

The students of a school are standing in rows and columns in the playground for a drill practice. A, B, C and D are the positions of four students as shown in figure.



Based on the given information, answer the questions number 41-45

41. What are the coordinates of A and B respectively? (1)
- a)  $A(3, 0.5); B(1.5, 5)$        b)  $A(0.5, 3); B(1, 5)$
- c)  $A(3, 0.5); B(5, 1.5)$       d)  $A(0.5, 3); B(1.5, 1)$
42. Abscissa of D - Ordinate of C = \_\_\_\_\_. (1)
- a) -1.5       b) -0.5
- c) -2.5      d) -3.5
43. What is the product of Ordinate of A and abscissa of C? (1)
- a) 12       b) 6
- c) 2      d) 1
44. What is the perpendicular distance of point B from x-axis? (1)
- a) 3 units       b) 2 units
- c) 1 units       d) 5 units
45. The point having maximum perpendicular distance from y-axis is \_\_\_\_\_. (1)
- a) B      b) C
- c) D      d) A

## Case Study 2

The parking charges of a car in a parking lot is ₹30 for the first two hours and ₹10 for the subsequent hours. Assume the total parking time to be 'x' hours and total charges as ₹y. Based on the given information, answer the questions number 46-50.

46. The linear equation for the situation is \_\_\_\_\_ . (1)
- a)  $y = 30 - 10(x - 2)$       ~~b)~~  $y = 30 + 10(x + 2)$   
c)  $y = 30 + 10(x - 2)$       d)  $y = 30x + 10(x - 2)$
47. How much is charged for 5 hour parking? (1)
- a) ₹40      ~~b)~~ ₹60  
c) ₹50      d) ₹55
48. What is the value of 'y' if  $x = 3$ ? (1)
- a) 50      b) 40  
c) 70      d) 20
49. If a person has paid ₹50 for parking his car, then for how many hours was the car parked in the parking lot? (1)
- a) 4.5 hours      b) 3 hours  
c) 5 hours      ~~d)~~ 4 hours
50. What is the value of 'x' if  $y = 70$ ? (1)
- a) 3      b) 4  
c) 5      d) 6

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