B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL
TERM-1 EXAMINATION (2025-26)
MATHEMATICS

Class VII   **MARKING SCHEME**   Date: 03.09.25

Section A

Choose the correct answer   **1 x 20 = 20**

1. If 25 x 32 = 800 then 2.5 x 3.2 = _____
    (a) 0.800   (b) 8.00   (c) 80.0   (d) 800.0

2. Which of the following is a false statement: _____
    (a) $-4 > -3$ (b) $-4 < -3$
    (c) -4 and -3 are non-comparable   (d) None

3. The mode of 4, 4, 4, 9, 15, 15, 15, 27, 37 data set is _____
    (a) 4   (b) 15   (c) 4 and 15   (d) 9

4. The greater integer lying between -10 and -15 is _____
    (a) -12 (b) -11 (c) -14 (d) -15

5. 0.036 m in cm is _____
    (a) 3.6 cm   (b) 0.36   (c) 36.0   (d) 0.036

6. If the mean of 4 , 2 , 3 , x is 4 what is the value of x
    (a) 1   (b) 4   (c) 7   (d) 5

7. The product of two integers is positive and their sum is negative only when ____
    (a) Both are positive   (b) Both are negative
    (c) One positive, one negative   (d) One of them is equal to zero

8. What is the median of the given observation: 1.61, 1.75, 1.79, 1.84 , 1.96 .
    (a) 1.61   (b) 2.11   (c) 1.79   (d) 1.84

9. An _____ is a geometrical figure formed by two rays, when joint at a single point.
    (a) Angle   (b) Edge   (c) Acute   (d) Line

10. When two lines intersect, the _____ angles so formed are equal.
    (a) Supplementary   (b) Complementary
    (c) Reflex   (d) Vertically opposite

11. The reciprocal of $\frac{3}{7}$ is _____
    (a) $\frac{3}{7}$ (b) $\frac{7}{3}$ (c) $\frac{1}{7}$ (d) $\frac{3}{1}$

12. _____ are those lines on a plane that do not meet each other at any point.

(a) Supplementary angles (b) Complementary angles

(c) Parallel lines (d) vertically opposite angles

13. Which of the following rational numbers is equivalent to $\frac{2}{3}$?

(a) $\frac{3}{2}$ (b) $\frac{4}{9}$ (c) $\frac{4}{6}$ (d) $\frac{9}{3}$

14. The reciprocal of _____ does not exist.

(a) 0 (b) 1 (c) 3 (d) 2

15. Find the product of $(-5 \times \frac{12}{15}) =$

(a) $\frac{15}{12}$ (b) $\frac{-3}{1}$ (c) $\frac{-1}{4}$ (d) $\frac{-4}{1}$

16. How many rays can be drawn from a given point?

(a) 2 (b) 5 (c) 8 (d) Infinitely many

17. What is the opposite of earning Rs. 100?

(a) sharing Rs. 100 (b) profit of Rs. 100

(c) gaining Rs. 100 (d) losing Rs. 100

18. The simplest form of $-\frac{25}{125}$ is _____

(a) 5 (b) -5 (c) $-\frac{1}{5}$ (d) None of these

19. Assertion : 5 is a rational number.

Reason : The square roots of all positive integers are rational

(a) Both assertion and reason are correct and reason is correct explanation for assertion

(b) Both assertion and reason are correct but reason is correct explanation for assertion

(c) The assertion is correct but reason is false

(d) Both assertion and reason are false

20. Assertion: Two lines that do not intersect on a plane are always perpendicular.

Reason: Parallel lines never meet, hence they form 90° angles with each other.

(a) Both assertion and reason are correct and reason is correct explanation for assertion

(b) Both assertion and reason are correct but reason is correct explanation for assertion

(c) Assertion is correct but reason is false

(d) Both assertion and reason are false

Section B

Do as directed   **2 x 5 =10**

21. Find the sum of the pairs of integers: (a) – 6, – 4   (b) +3, – 4

The sums of the pairs of integers are
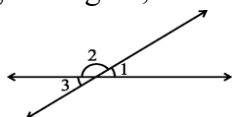$(a)\ (-6) + (-4) = -10$
$(b)\ +3 + (-4) = -1$

22. Find: (a) $2.3 \div 100$ (b) $78.9 \div 1000$

(a) $2.3 \div 100 = 0.023$ (b) $78.9 \div 1000 = 0.0789$

23. In the given figure, if $\angle 1 = 30°$, find $\angle 2$ and $\angle 3$.

$\angle 1$ and $\angle 3$ are vertically opposite angles
$\angle 1 = 30° = \angle 3 = 30°$
By linear pairs , $\angle 2 + 30° = 180°$
$\angle 2 = 180° - 30°$
$= 150°$

or

Find the complement of each of the following angles:
(a) 35°   (b) 72°

(a) The two angles are said to be complementary angles if the sum of those angles is 90°
Complementary angle for given angle is $90° – 35° = 55°$
(b) The two angles are said to be complementary angles if the sum of those angles is 90°
Complementary angle for given angle is $90^0 – 72° = 18°$

24. Write five rational numbers that are smaller than 2.
Five rational numbers are -1, 0 , - 2 , -3 , - 4 , 1 ….. there are infinite

25. The weights (in kg.) of 15 students present in a class are:
38, 42, 43, 35, 37, 45, 50, 32, 43, 40, 36, 38, 43, 38 and 47
Determine the Mode and Median of the above data.
The ordered data set is:
32, 35, 36, 37, 38, 38, 38, 40, 42, 43, 43, 43, 45, 47, 50
38 and 43 both appears 3 times.
Modes are 38 and 43
The 8th value in the ordered data set is 40
Median = 40

Section D

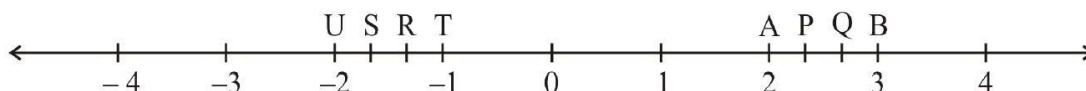**Solve the following**   **3 x 6 = 18**

26. The points P, Q, R, S, T, U, A and B on the number line. Find the value of the rational numbers represented by P, Q, R and S.

P = 7/3
Q = 8/3

R = − 4/3

S = −5/3

<div align="center">or</div>

Write the following rational numbers in descending order: $\dfrac{-1}{3}$, $\dfrac{4}{9}$, $\dfrac{-2}{3}$

The given rational numbers in descending order are: $\dfrac{4}{9}$, $\dfrac{-2}{9}$, $\dfrac{-4}{9}$

$= \dfrac{4}{9}$, $\dfrac{-1}{3}$, $\dfrac{-2}{3}$

27. Among two supplementary angles the measure of the larger angle is 44º more than the measure of the smaller. Find their measures.

Let the smaller angle be x degrees.

The larger angle is 44º more than the smaller,

So it is x+44 degrees.

Supplementary angles add up to 180º. Therefore, we can set up the equation: x+(x+44)=180

Combine like terms: 2x+44=180

Subtract 44 from both sides: 2x=180−44

2x=136

x=136 ÷2

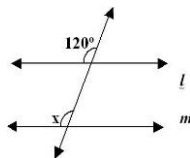x=68

The smaller angle is 68 º.

Now, find the measure of the larger angle: Larger angle = x+44=68+44=112

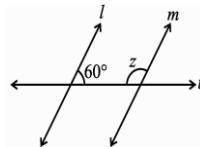The measures of the two supplementary angles are 68 º and 112 º.

<div align="center">or</div>

Lines l ‖ m; t is a transversal . Find the value of ∠z and ∠x

(a)   (b)

(a) The angle measuring is 120°
by corresponding angles
x = 120 º

(b) The sum of the interior angles on the same side of the transversal is supplementary.

60º+x=180º

x=180º−60º

x=120º

28. The marks (out of 100) obtained by a group of students in a science test are 85, 76, 90, 85, 39, 48, 56, 95, 81 and 75.

Find the: (a) Highest and the lowest marks obtained by the students.

(b) Range of the marks obtained.

(c) Mean marks obtained by the group.

(a) Highest and lowest marks obtained by the students

The highest mark is 95.
The lowest mark is 39.

(b) Range of the marks obtained
The range is the difference between the highest and lowest marks.
Range = 95−39=56.

(c) Mean marks obtained by the group The mean is the sum of all the marks divided by the number of students.
Sum of marks = 85+76+90+85+39+48+56+95+81+75=730.
Number of students = 10.
Mean = 730 / 10=73.

29. At Srinagar temperature was – 5°C on Monday and then it dropped by 2°C on Tuesday. What was the temperature of Srinagar on Tuesday? On Wednesday, it rose by 4°C. What was the temperature on this day?

Tuesday's Temperature
The initial temperature on Monday was −5∘C. On Tuesday, it dropped by 2∘C. To find the new temperature, we subtract 2∘C from the Monday temperature.
−5∘C−2∘C=−7∘C
The temperature on Tuesday was −7∘C.

Wednesday's Temperature
On Wednesday, the temperature rose by 4∘C from Tuesday's temperature. To find the new temperature, we add 4∘C to the Tuesday temperature.
−7∘C+4∘C=−3∘C
The temperature on Wednesday was −3∘C.

30. Find the area of rectangle BCDE in this figure

From the figure, the sides of the rectangle are BC, CD, DE, and EB.

The length of side BE is given as $2\frac{3}{4}$ cm.

The width of side DE is given as $\frac{7}{6}$ cm.

$2\frac{3}{4} = \frac{(2\times4)+3}{4}$

$= \frac{8+3}{4}$

$= \frac{11}{4}$ cm.

Area = Length × Width.
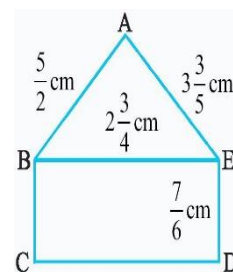Area = BE×DE
Area = $\frac{11}{4} \times \frac{7}{6}$
Area = $\frac{11\times7}{4\times6}$
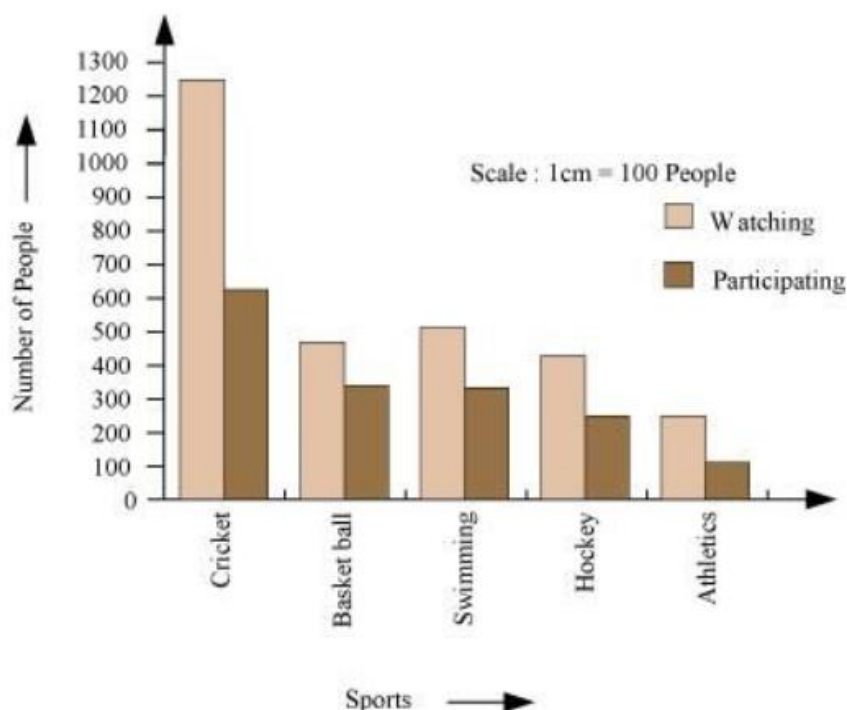
$= \frac{77}{24}$ The area of rectangle BCDE is $\frac{77}{24}$ square centimeters.

31. Consider the following data gathered from a survey of a colony.

Draw a double bar graph choosing an appropriate scale.

Favourite Sport:	Cricket	Basket – Ball	Swimming	Hockey	Athletics
Watching	1240	470	510	423	250
Participating	620	320	320	250	105

Section E

Solve the following   **5 x 4 = 20**

32. Evaluate each of the following:

(a) (–30) ÷ 10 x –1   (b) 50 ÷ (–5) x – (–5)   (c) (–36) ÷ (–9)
                                                                    = (–36) ÷ (–9)
(a) (–30) ÷ 10 x –1   (b) 50 ÷ (–5) x – (–5)   = + 4
= (–30) ÷ – 10   = 50 ÷ (+ 25)
= –3   = 2

(d) (– 49) ÷ [49 x (– 1)]   (e) 13 ÷ [(–2) + 1]
 = (– 49) ÷ [– 49]   = 13 ÷ [–1]
  = 1   = – 13

33. In a village of 40 children $\frac{1}{5}$ of the total number of children like to play Cricket, $\frac{2}{5}$ of the total number like to play football and the remaining children like to play chess.
(a) How many children like to play cricket?

$$40 \times \frac{1}{5} = \frac{40}{5} = 8$$

8 children like to play cricket.

(a) How many children like to play football?

$$40 \times \frac{2}{5} = \frac{80}{5} = 16$$

16 children like to play football.

(b) What fraction of the total number of children like to play chess?

$$1 - \frac{3}{5} = \frac{5}{5} - \frac{3}{5} = \frac{2}{5}$$

The fraction of children who like to play chess is $\frac{2}{5}$

(c) Find the sum of all the children of different sports ?

Sum: 8+16+16=40

34. In the adjoining figure, AB ∥ CD and a transversal PQ cuts at L and M respectively. If ∠QMD = 100º, find all the other angles.

∠LMC is vertically opposite to ∠QMD.
Vertically opposite angles are equal.
∠LMC=∠QMD=100∘.
∠CMQ and ∠QMD form a linear pair.
Linear pairs are supplementary (180∘).
∠CMQ+∠QMD=180∘
∠CMQ+100∘=180∘
∠CMQ=180∘−100∘=80∘.
∠DML is vertically opposite to ∠CMQ.
∠DML=∠CMQ=80∘.
So, the angles at M are: ∠LMC=100∘, ∠CMQ=80∘, and ∠DML=80∘.
∠PLB corresponds to ∠QMD.
∠PLB=∠QMD=100∘.
∠PLA corresponds to ∠CMQ.
∠PLA=∠CMQ=80∘.
∠BLM corresponds to ∠LMC.
∠BLM=∠LMC=100∘.
∠ALM corresponds to ∠DML.
∠ALM=∠DML=80∘.
Therefore ,
∠LMC=100∘
∠CMQ=80∘
∠DML=80∘
∠PLB=100∘
∠PLA=80∘
∠BLM=100∘
∠ALM=80∘
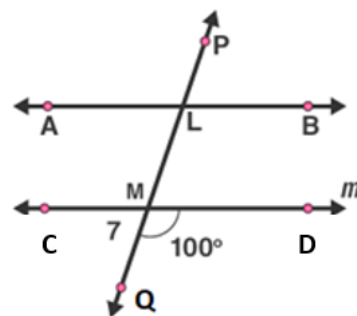
35. Solve the expression by following the order of operations.

(-2/3) + (1/4) x (5/6) - (7/12) ÷ (2/3)
= (-2/3) + (5/24) - (7/12) x (3/2)
= (-2/3) + (5/24) - (21/24)
= (-16/24) + (5/24) - (21/24)

= (-32/24)
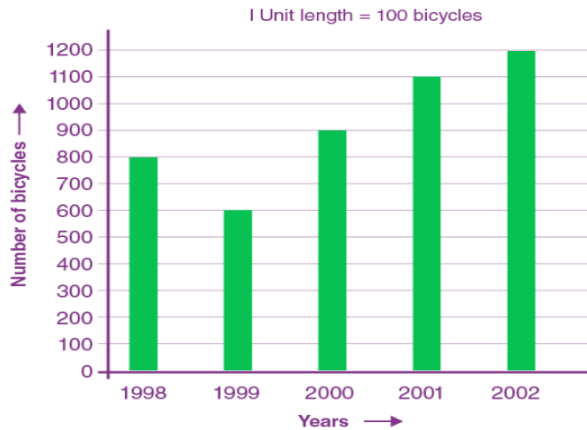= - 4/3

Section E

Solve the following $\qquad$ **4 x 3 = 12**

36. Read the following bar graph which shows the number of bicycle sold by a bookstore during five consecutive years and answer the question given below

I Unit length = 100 bicycles

(a) How many bicycle were sold from 2001 to 2002?
The total number of bicycles sold during these two years is the sum of the sales for each year.
Sales in 2001: 1100
Sales in 2002: 1200
Total: 1100+1200=2300
2300 bicycles were sold from 2001 to 2002.

(b) In which year were fewer than 700 bicycles sold ?
The sales for each year are:
1998: 800
1999: 600
2000: 900
2001: 1100
2002: 1200
Only in the year 1999 were fewer than 700 bicycles sold.

(c) How many bicycles were sold in 2000 than 1998 ?
To find how many more bicycles were sold in 2000 than in 1998, subtract the sales of 1998 from the sales of 2000.
Sales in 2000: 900
Sales in 1998: 800
Difference: 900−800 = 100
100 more bicycles were sold in 2000 than in 1998.

(d) What the scale here in this above graph

37. Divide the sum of $-2\frac{5}{17}$ and $3\frac{5}{34}$ by their difference

Convert $-2\frac{5}{17}$:

$$-2\frac{5}{17} = -\frac{(2 \times 17) + 5}{17} = -\frac{34 + 5}{17} = -\frac{39}{17}$$

Convert $3\frac{5}{34}$:

$$3\frac{5}{34} = \frac{(3 \times 34) + 5}{34} = \frac{107}{34} \qquad \frac{107}{34}$$

Find a common denominator, which is 34.

$$-\frac{39}{17} + \frac{107}{34} = -\frac{39 \times 2}{17 \times 2} + \frac{107}{34} = -\frac{78}{34} + \frac{107}{34}$$

Sum:

$$\frac{-78 + 107}{34} = \frac{29}{34}$$

Find a common denominator, which is 34.

$$-\frac{39}{17} - \frac{107}{34} = -\frac{39 \times 2}{17 \times 2} - \frac{107}{34} = -\frac{78}{34} - \frac{107}{34}$$

Difference:

$$\frac{-78 - 107}{34} = -\frac{185}{34}$$

Division of fractions: multiply the first fraction by the reciprocal of the _____ d.

$$\frac{29}{34} \div \left(-\frac{185}{34}\right) = \frac{29}{34} \times \left(-\frac{34}{185}\right)$$

Simplify by canceling out 34:

$$-\frac{29}{185}$$

or

Simplify:

$$21.5 \div 5 - \frac{1}{5} \text{ of } (20.5 - 5.5) + 0.5 \times 8.5$$

$$\{(21.5 / 5) - [(1 / 5) \times (20.5 - 5.5)]\} + (0.5 \times 8.5)$$

$$4.3 - \left(\frac{1}{5} \times 15\right) + 4.25$$

$$4.3 - 3 + 4.25$$

$$= 5.55$$

38. A water tank has a step inside it. A monkey is sitting on the utter topmost step (which is the first step). The water level is present at the ninth step.

He jumps three steps down the stairs and then successively jumps back two steps upwards. In how many jumps will the Monkey reach the following water level?

Initially, the Monkey is sitting on the topmost step, which is the first step.
In the 1st jump monkey will be at the step = 1 + 3 = 4 steps
In the 2nd jump monkey will be at the step = 4 + (-2) = 4 – 2 = 2 steps
In the 3rd jump monkey will be at the step = 2 + 3 = 5 steps
In the 4th jump monkey will be at the step = 5 + (-2) = 5 – 2 = 3 steps
In the 5th jump monkey will be at the step = 3 + 3 = 6 steps
In the 6th jump monkey will be at the step = 6 + (-2) = 6 – 2 = 4 steps
In the 7th jump monkey will be at the step = 4 + 3 = 7 steps
In the 8th jump monkey will be at the step = 7 + (-2) = 7 – 2 = 5 steps
In the 9th jump monkey will be at the step = 5 + 3 = 8 steps
In the 10th jump monkey will be at the step = 8 + (-2) = 8 – 2 = 6 steps
In the 11th jump monkey will be at the step = 6 + 3 = 9 steps
∴Monkey took a total of 11 jumps (i.e., 9th step) to reach the water level.

or

(a) Find the product using the suitable properties:

$26 \times (-48) + (-48) \times (-36)$

The common factor in both terms is (−48)
Apply the distributive property.
Factor out the common term: (-48)×(26+(-36))
$= (-48) \times (-10)$
$= 480$

(b) Verify a – (– b) = a + b for the following values of alphabets a and b.

a = 21, b = 18

a = 21,b = 18:

Left Hand Side (LHS):

$a-(-b) = 21-(-18)$
$= 21+18$
$= 39$

Right Hand Side (RHS):

$a+b = 21+18$
$= 39$

Since LHS = RHS = 39, the equation holds true.

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