Indian School Al Wadi Al Kabir

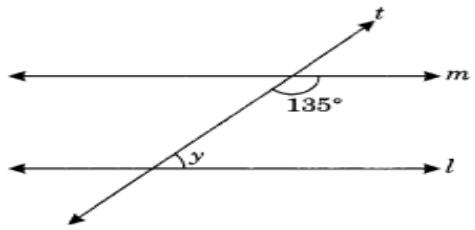
Midterm Exam (2024-25)

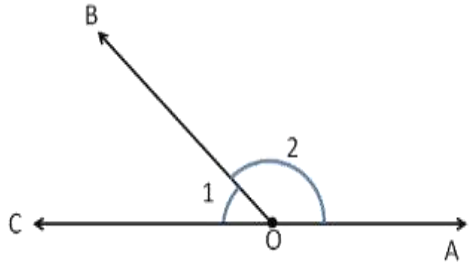
Mathematics-Set II

CLASS: VII **MARKING SCHEME** Max. Marks: 80

Date: 19-09-2024 Time: $2\frac{1}{2}$hours

Section A: Multiple Choice Question (Q.1 to Q.15) of **1** mark each

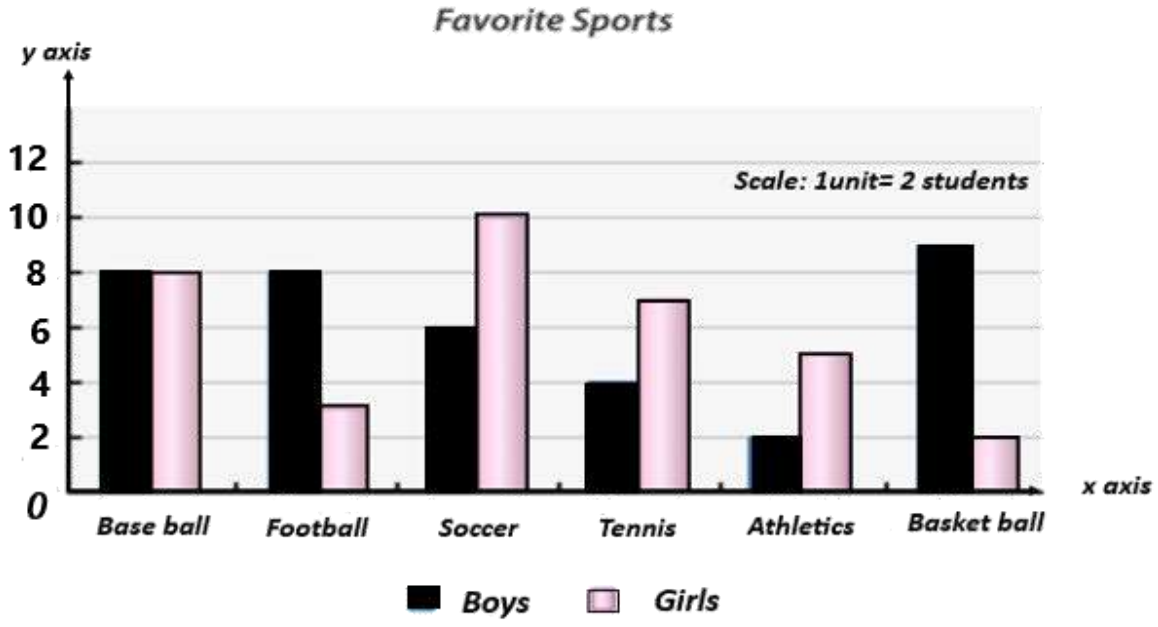
1.	Find the mode of: 24, 26, 22, 24, 24, 26, 24, 20, 24, 28, 24							
	A		**B**		**C**	24	**D**	
2.	The product of $(-25 \times 40) \times (-635)$ is equal to:							
	A		**B**		**C**		**D**	635000
3.	Find the median of the data: 24, 36, 46, 17, 18, 25, 35							
	A	25	**B**		**C**		**D**	
4.	Hari purchased 2.5 kg of potatoes at the rate of ₹ 24 per kg. How much money should he pay?							
	A		**B**	₹ 60.0	**C**		**D**	
5.	Name the property: $-13 \times (-15 + 12) = [(-13) \times -15] + [(-13) \times (12)]$							
	A		**B**		**C**	distributive property	**D**	
6.	The cost of 100 fancy caps is ₹ 3260. Find the cost of one such cap?							
	A		**B**		**C**	₹ 32.60	**D**	
7.	If $l \parallel m$, then find the value of y: 							
	A		**B**	45^0	**C**		**D**	

8.	Which of the following pairs of angles are not supplementary?							
	A		**B**	120° and 70°	**C**		**D**	
9.	An equation for "The sum of two times a number and 15 is 47"							
	A		**B**		**C**	$2x + 15 = 47$	**D**	
10.	John cuts a ribbon of length $\frac{15}{4}$ cm into smaller pieces of length $\frac{3}{4}$ cm each. How many pieces of ribbon will john get?							
	A		**B**		**C**		**D**	5
11.	Find the reciprocal of $(\frac{-1}{2} \times \frac{3}{4})$							
	A		**B**		**C**	$\frac{-8}{3}$	**D**	
12.	3 less than 5 times a number is 27. Find the number.							
	A	6	**B**		**C**		**D**	
13.	The standard form of the rational number $\frac{21}{-28}$ is:							
	A	$\frac{-3}{4}$	**B**		**C**		**D**	
14.	The value of "n" in the equation $7n + 5 = 19$							
	A		**B**	2	**C**		**D**	
15.	In the given figure, $\angle 1 = 73°$, then the measure of $\angle 2$? 							
	A		**B**		**C**	107°	**D**	

Q16.

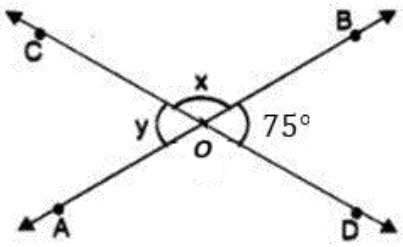
Source based Question -5 Marks

The bar graph shows the result of a survey conducted among students to find their favorite sports. Observe the graph and answer the following questions:



I	Which sport is preferred by the maximum number of girls?							
	A		**B**		**C**	Soccer	**D**	
II	What is the total number of students opted for tennis?							
	A		**B**	11	**C**		**D**	
III	Which game is chosen by an equal number of boys and girls?							
	A	Base ball	**B**		**C**		**D**	
IV	In which game the number of girls is double that of athletics?							
	A		**B**		**C**		**D**	Soccer
V	Which sport is preferred by the minimum number of boys?							
	A		**B**	Athletics	**C**		**D**	

Section B: Short Answer Questions (Type – 1) of **2** marks each (Q.17 to Q.21)

17.	The marks obtained in a class test are given below. Observe the data and answer the following questions: 4, 6, 7, 5, 3, 5, 4, 5, 2, 6, 2, 5, 1, 9, 6, 5, 8, 4, 6, 7 (i) Which number is the highest? (ii) Which number is the lowest? (iii) What is the range of the data?
Ans:	i) 9 ----------$\frac{1}{2}$ ii) 1 ----------$\frac{1}{2}$ iii) $9-1=8$ ----------1
18.	Raju's father's age is 5 years more than three times Raju's age. Find Raju's age, if his father is 44 years old. (Set up an equation and solve it.)
Ans:	Let Raju= x years ----------$\frac{1}{2}$ Raju's father= $3x+5=44$ ----------1 $3x=44-5=39$ $x=39/3=13$ ----------$\frac{1}{2}$
19.	A bird descends at the rate of 15 ft/min. How long will it take for the bird to reach the ground if it is flying at 450 ft high in the sky?
Ans:	$450 \div 15$= 30 minutes ----------$1\frac{1}{2}+\frac{1}{2}$
20.	The sum of two rational numbers is $\frac{17}{-4}$. If one of them is $\frac{-7}{3}$, find the other number.
Ans:	$\frac{-7}{3}+x=\frac{17}{-4}$ ----------$\frac{1}{2}$ $x=\frac{-17}{4}-\left(\frac{-7}{3}\right)$ ----------$\frac{1}{2}$ $x=\frac{-51}{12}-\left(\frac{-28}{12}\right)$ ----------$\frac{1}{2}$ $x=\frac{-51}{12}+\left(\frac{28}{12}\right)=\frac{-51}{12}+\left(\frac{28}{12}\right)=\frac{-23}{12}$ ----------$\frac{1}{2}$
21.	If $\angle BOD=75°$, find the value of $\angle x$ and $\angle y$ 
Ans:	$\angle x$= 180-75= 105° (Linear pair) ----------1 and $\angle y$= 75°(vertically opposite angles) ----------1

Section C: Long Answer Questions (Type – 1) of **3** marks each (Q.22 to Q.27)

22. A cricketer scores the following runs in eight innings:
58, 76, 40, 35, 46, 45, 10, 90. Find the mean score.

Ans: Mean $= \frac{Sum\ of\ all\ observations}{Total\ number\ of\ observations}$ ----------$\frac{1}{2}$

$= \frac{58+76+40+35+46+45+10+90}{8}$ ----------$1\frac{1}{2}$

$= \frac{400}{8} = 50$ ----------1

23 Verify that $a \times (b + c) = (a \times b) + (a \times c)$ for the values of $a = 12$, $b = (-4)$, $c = 2$.

Ans: LHS= $a \times (b + c)$
$= 12 \times (-4 + 2)$
$= 12 \times (-2)$
$= (-24)$ ----------$1\frac{1}{2}$

RHS $= (a \times b) + (a \times c)$
$= (12 \times -4) + (12 \times 2)$
$= (-48) + 24$
$= (-24)$ ----------1

LHS = RHS ----------$\frac{1}{2}$

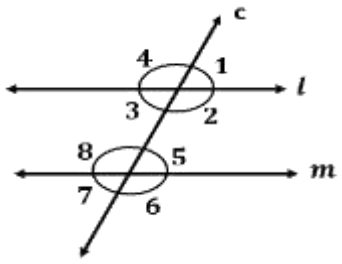
Hence verified

24. State the property that is used in each of the following statements:

i) If $l \parallel m$, then $\angle 1 = \angle 5$

ii) If $\angle 2 = \angle 8$ then, $l \parallel m$

iii) If $\angle 2 + \angle 5 = 180^0$ then, $l \parallel m$



Ans:

i) $\angle 1 = \angle 5$--------Corresponding angles ----------1

ii) $\angle 2 = \angle 8$ -------Alternative interior angles ----------1

iii) $\angle 2 + \angle 5 = 180^0$ ------- Co- interior angles ----------1

25 Ravi bought a rectangular plot of length 25.8 m and breadth 23.5 m.
(i) Find the area of the plot.
(ii) If the cost of tiling 1 m^2 area is ₹ 70, find the cost of tiling the entire area.

Ans: Area of a rectangle$= l \times b$ ----------$\frac{1}{2}$
$= 25.8\ m \times 23.5\ m$ ----------1
$= 606.3 m^2$ ----------$\frac{1}{2}$

the cost of tiling the entire area= ₹ $70 \times 606.3 m^2$ ----------$\frac{1}{2}$
=₹ 4244.10 ----------$\frac{1}{2}$

26. In an isosceles triangle, the base angles are equal. The vertex angle is 40°. What are the base angles of the triangle? (Remember, the sum of three angles of a triangle is 180°).

Ans:	Let base angles $=x$ ----------$\frac{1}{2}$ Then, $x + x + 40 = 180°$ ----------$\frac{1}{2}$ $2x + 40 = 180°$ ----------$\frac{1}{2}$ $2x = 180° - 40°$ ----------$\frac{1}{2}$ $2x = 140°$ ----------$\frac{1}{2}$ $x = 140° \div 2 = 70°$ ----------$\frac{1}{2}$
27	Represent the following rational numbers on the same number line. $\frac{-3}{4}$, $\frac{1}{4}$, 0 and $\frac{3}{4}$
Ans:	No line ----1 mark, each number ----------$\frac{1}{2}$ marks
	Section D: Long Answer Questions (Type – 2) (Q.28 to Q.33) & Case study (Q.34 &35) of **4** marks each
28.	List any four rational numbers between the following rational numbers: $\frac{4}{3}$ and $\frac{7}{5}$
Ans:	$\frac{4}{3}$ and $\frac{7}{5}$ (between1.33 to 1.4) LCM = 15 ----------$\frac{1}{2}$ $\frac{20}{15}$ and $\frac{21}{15}$ ----------$1\frac{1}{2}$ Multiply by 10 $\frac{200}{150}$ and $\frac{210}{150}$ $\frac{201}{150}$, $\frac{202}{150}$, $\frac{203}{150}$ and $\frac{204}{150}$ ---------- each number $\frac{1}{2}$
29.	Jawed says that he has 7 marbles more than five times the marbles Rajul has. Jawed has 37 marbles. How many marbles does Rajul have?
Ans:	Let the number of marbles Rujul has= x ----------$\frac{1}{2}$ Then, $5x + 7 = 37$ ----------$1\frac{1}{2}$ $5x = 37 - 7$ ----------$\frac{1}{2}$ $5x = 30$ ----------$\frac{1}{2}$ $x = 30 \div 5$ ----------$\frac{1}{2}$ $x = 6$ ----------$\frac{1}{2}$

30. The sale of books in a bookstore in four consecutive years are given below. Draw double bar graph for the data.

Year	2006	2007	2008	2009
Novels	300	400	450	600
Short stories	500	350	600	500

Ans: Each bar------ $\frac{1}{2}$ marks

31. The temperature at 12 noon was 10°C above zero. If it decreases at the rate of 2°C per hour until midnight.

(i) What would be the temperature at 4 pm?
(ii) At what time would the temperature be $8℃$ below zero?
(iii) What would be the temperature at mid-night?
(iv) When the temperature reaches $(-4℃)$ the alarm rings. What time would be the alarm rings?

Ans:
i) temperature at 4 pm=$2℃$ ----------1
ii) temperature be $8℃$ below zero= at 9 pm ----------1
iii) temperature at mid-night= $(-14℃)$ ----------1
iv) alarm rings at 7 pm $(-4℃)$ ----------1

32. Nina bought 17.50kg of tomatoes at ₹ 19.60 per kg, 3.250 kg of cauliflower at ₹ 9.80 per kg.

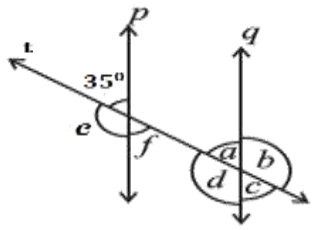
i) What is the total weight of vegetables in kg did she buy?
ii) How much did she pay to the shopkeeper altogether?

Ans: Cost of 17.50kg of tomatoes at ₹ 19.60 per kg= 17.50kg × ₹ 19.60
= ₹ 343.00
Cost of 3250g of cauliflower at ₹ 9.80 per kg =3.250kg × ₹ 9.80
= ₹ 31.85

i) The total weight of vegetables in kg =17.50kg +3.250kg ----------$1\frac{1}{2}$
= 20.75 kg ----------$\frac{1}{2}$

ii) The amount she paid to the shopkeeper altogether = ₹ 343.00+₹ 31.85 ----------$1\frac{1}{2}$
=₹ 374.85 ----------$\frac{1}{2}$

33. If $p \parallel q$, and $'t'$ is a transversal, then find all the angles a, b, c, d, e and f. ---------- each angle $\frac{1}{2}$ mark



i) $\angle e = 180° - 35° = 145°$ (linear pair)
ii) $\angle f = 35°$(***vertically opposite angles***
iii) $\angle f = \angle c =$ $35°$(***corresponding angles***
iv) $\angle e = \angle d =$ $145°$(***corresponding angles***
v) $\angle f = \angle c =$ $35°$(***corresponding angles***
vi) $\angle d = \angle b =$ $145°$ (***vertically opposite angles***
vii) $\angle c = \angle a =$ $35°$(***vertically opposite angles***

34.	**Case Study-1** A group of 100 students , $\frac{3}{10}$ participated in art , $\frac{1}{10}$ participated in dance , 35 members in music and the remaining in sports. (1) How many participated in art? (2) How many participated in dance? (3) What fraction of the students participated in music? (4) How many participated in sports?	
Ans:	i) Number of students participated in art = $\frac{3}{10} \times 100$ =30 ----------1 ii) Number of students participated in dance = $\frac{1}{10} \times 100$ =10 ----------1 iii) Fraction of the students participated in music = $\frac{35}{100} = \frac{7}{20}$ ----------1 iv) Number of students participated in dance = $100 - (30 + 10 + 35)$ $= 100 - 75 = 25$ ----------1	
35.	**Case Study-2** A street fruit vendor has mangoes, apples and oranges in his fruit baskets. If the number of oranges is 73, answer the following: i) The number of oranges is 4 less than three times the number of mangoes. If the number of oranges is 73, find the number of mangoes. The number of oranges is 3 more than twice the number of apples. How many apples are there?	
Ans:	i) Let x be the number of mangoes. ----------$\frac{1}{2}$ $3x - 4 = 73$ $3x = 73 + 4$ $x = 77 \div 3$ mangoes ----------$1\frac{1}{2}$ ii) Let y be the number of apples. ----------$\frac{1}{2}$ $2y + 3 = 73$ $2y = 70$ $y = 70 \div 2 = 35$ apples ----------$1\frac{1}{2}$	

****