


Class VII
Mid Term Exam (2023-24)
Subject : Mathematics
Marking Key (Set A1/A2)

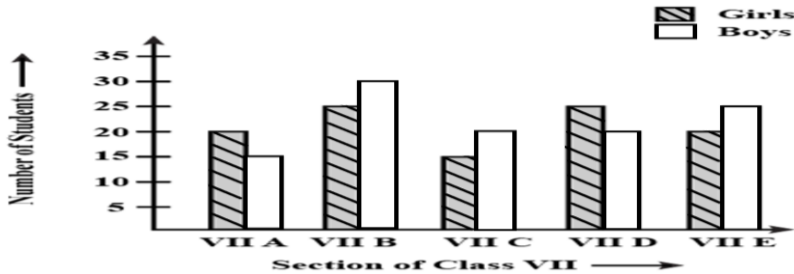
Time Allowed : 2 ½ Hours**Max. Marks : 60**

General Instructions:

1. The question paper consists of 18 questions divided into 3 sections A, B and C.
2. Section A has 3 questions. Q1 comprises of 8 parts of 1 mark each. Q2 and Q3 are case studies which comprises of 5 parts of 2 marks each (any four to be attempted).
3. Section B has 6 questions. Q4 - Q5 are of 4 marks each, Q6-Q9 are of 1 mark each.
4. Section C has 9 questions. Q10-Q14 are of 2 marks each, Q15-Q16 are of 3 marks each and Q17-Q18 are of 4 marks each.

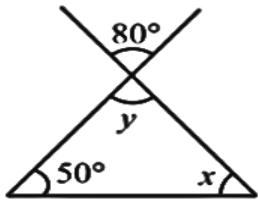
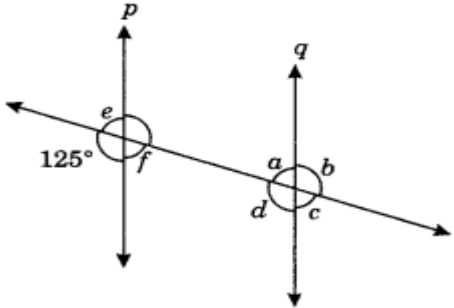
		Section A	
Q. No.	Q. No.		Marks
A1	A2	Question 1 has 8 multiple choice sub-parts. Choose the correct answer from (i) to (viii). Each sub-part is of 1 mark.	8 x 1
1. (i)	(viii)	Which of the following is the multiplicative identity for an integer a ? a) a b) 1 c) 0 d) - 1	1
(ii)	(vii)	Reciprocal of $\frac{2}{3}$ is a) $\frac{2}{3}$ b) $-\frac{2}{3}$ c) $\frac{3}{2}$ d) -1	1
(iii)	(vi)	The median of the data: 3, 4, 4, 6, 7, 3, 4 is a) 4 b) 3 c) 7 d) 6	1
(iv)	(v)	Shifting one term from one side of an equation to another side with a change of sign is known as a) commutativity b) transposition c) distributivity d) associativity	1

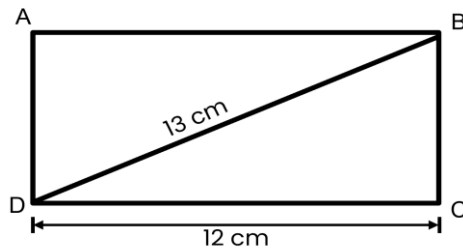
(v)	(iv)	<p>The equation for ‘If you take away 6 from 6 times y, you get 60’ is</p> <p>a) $6 - 6y = 60$ b) $6y - 6 = 60$ c) $6 = 6y + 60$ d) $6 + 6y = 60$</p>	1
(vi)	(iii)	<p>Which of the following pair of angles are supplementary?</p> <p>a) $48^\circ, 42^\circ$ b) $60^\circ, 60^\circ$ c) $75^\circ, 105^\circ$ d) $179^\circ, 2^\circ$</p>	1
(vii)	(ii)	<p>In ΔABC,</p> <p>a) $AB + BC > AC$ b) $AB + BC < AC$ c) $AB + AC < BC$ d) $AC + BC < AB$</p>	1
(viii)	(i)	<p>How many altitudes does a triangle have?</p> <p>a) 1 b) 3 c) 6 d) 9</p> <p>Ans i) b ii) c iii) a iv) b v) b vi) c vii) a viii) 3</p>	1
		Q 2 and Q 3 are Case Study Based questions and each case study based question has 5 sub-parts. You have to attempt only 4 sub-parts out of these 5 sub-parts. Each sub-part is of 2 marks.	
2.	2.	<p>On the occasion of Diwali ,Reshma and Rohan bought apples and sweets . Reshma purchased 56.5kg sweets at the rate of Rs 8 per kg. Rohan purchased 25.75 kg apples at the rate of Rs 100 per kg.</p>  <p>i) Money to be paid by Reshma for sweets is</p> <p>a) Rs 565 b) Rs 45.2 c) Rs 452 d) Rs 5650</p> <p>ii) Money to be paid by Rohan for apples is</p> <p>a) Rs 257.5 b) Rs 25.75 c) Rs 25750 d) Rs 2575</p> <p>iii) Reshma distributed sweets to 10 of her neighbours. Sweets received by each neighbour is</p> <p>a) 0.565kg b) 5.65kg c) 0.0565kg d) 56.05kg</p> <p>iv) Rohan distributed apples to 5 of his friends.Apples received by each friend is</p>	<p>4 x 2</p> <p>2m for each</p>

		<p>a) 5.15kg b) 2.575kg c) 5.65kg d) 0.2575kg</p> <p>v) To divide a decimal number by 1000, shift the digits in the decimal number</p> <p>a) to the right by as many places as there are zeros over 1, to get the quotient.</p> <p>b) to the left by as many places as there are in the divisor, to get the quotient</p> <p>c) to the left by as many places as there are zeros over 1, to get the remainder</p> <p>d) to the left by as many places as there are zeros over 1, to get the quotient</p> <p>Ans i) c ii) d iii) b iv) a v) d</p>	
3.	3.	<p>In S. S. Public School, number of students enrolled in different sections of class VII are shown in the double bar graph given below. Study the double bar graph and answer the questions that follow.</p>  <p>i) The total number of boys in section A, B, C of Class VII is</p> <p>a) 60 b) 65 c) 85 d) 80</p> <p>ii) In which sections, the number of girls is greater than the number of boys?</p> <p>a) A and B b) B c) C d) D and A</p> <p>iii) In which section, the number of boys is the maximum?</p> <p>a) A b) B c) C d) D</p> <p>iv) In which section, the number of girls is the least?</p> <p>a) A b) B c) C d) D</p> <p>v) Mean of number of girls and boys of class VII A is</p> <p>a) 35 b) 17.5 c) 25 d) 20</p> <p>Ans i) b ii) d iii) b iv) c v) b</p>	<p>4 x 2</p> <p>2m for each</p>
		Section B	
4.	4.	Fill in the blanks :	4 x 1

5.	5.	<p>(i) $(-8) + (-8) + (-8) = 3 \times (-8)$</p> <p>(ii) $113 \div \underline{-113} = -1$</p> <p>(iii) If $x - \frac{1}{2} = -\frac{1}{2}$ then $x = \underline{0}$.</p> <p>(iv) A <u>variable</u> takes on different numerical values, its value is not fixed.</p> <p>Match the following:</p> <p>Ans i) --- c ii) --- a iii) -- d iv) --b</p> <table><tr><th>Type of angles</th><th>Measure</th></tr><tr><td>(i) In a triangle, exterior angle is</td><td>(a) longest side</td></tr><tr><td>(ii) In a right triangle, hypotenuse is</td><td>(b) are equal</td></tr><tr><td>(iii) supplementary angles</td><td>(c) sum of interior opposite angles</td></tr><tr><td>(iv) vertically opposite angles</td><td>(d) sum is 180°</td></tr></table>	Type of angles	Measure	(i) In a triangle, exterior angle is	(a) longest side	(ii) In a right triangle, hypotenuse is	(b) are equal	(iii) supplementary angles	(c) sum of interior opposite angles	(iv) vertically opposite angles	(d) sum is 180°	<p>1m for each</p> <p>4 x 1</p> <p>1m for each</p>
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		Question 6 to 9 are Very Short Answer type questions carrying one mark each.	4 x 1										
6.	8	<p>Multiply : $\frac{2}{5} \times 5\frac{1}{4}$</p> <p>Ans $2/5 \times 21/4$</p> <p>= $21/10$</p>	1										
7.	7.	<p>Write the following equation in the statement form:</p> <p>A1: $2x + 3 = 7$</p> <p>Ans 3 added to twice a number gives 7.</p> <p>A2: : $2x + 3 = 8$</p> <p>Ans 3 added to twice a number gives 8.</p>	1										
8.	6.	<p>Suppose two lines are given. How many transversals can you draw for these lines?</p> <p>Ans Infinite</p>	1										
9.	9.	<p>State True or False :</p> <p>Mean of the data is always from the given data.</p> <p>Ans False</p>	1										

		Section C	
		Question 10 to 14 carry two marks each.	5x2
10.	12.	<p>The temperature at 12 noon was 10°C above zero. If it decreases at the rate of 2°C per hour until midnight, at what time would the temperature be 8°C below zero?</p> <p>Ans Rate of decreasing temp. = 2°C</p> <p>Initial temp. = 10°C , Final temp. = -8°C</p> <p>Difference = $10^{\circ}\text{C} - (-8^{\circ}\text{C}) = 18^{\circ}\text{C}$</p> <p>No. of hours = $18^{\circ}\text{C}/2^{\circ}\text{C} = 9$ hours</p> <p>Time = 9 pm.</p>	<p>2</p> <p>1</p> <p>1/2</p> <p>1/2</p>
11	11.	<p>In a class test containing 20 questions, (+ 4) marks are given for every correct answer and (–1) marks are given for every incorrect answer and no marks for not attempting any question.</p> <p>Rohan gets four correct and six incorrect answers. What is his score?</p> <p>Ans Marks for one correct ans = 4</p> <p>Marks for one incorrect ans = –1</p> <p>Rohan's score = $4 \times 4 + 6 \times (-1)$</p> <p style="text-align: center;">= 10</p>	<p>2</p> <p>1</p> <p>1</p>
12.	10.	<p>Solve for x : $-2(x + 3) = 8$</p> <p>Ans A1: $-2x - 6 = 8$</p> <p style="text-align: center;">$\Rightarrow x = -7$</p> <p>A2: $-2x - 6 = 10$</p> <p style="text-align: center;">$\Rightarrow x = -8$</p>	<p>2</p> <p>1</p> <p>1</p>
13.	13.	<p>In the given figure, name the following pair of angles.</p> <p>(i) Obtuse vertically opposite angles</p> <p>(ii) Adjacent complementary angles</p> <div style="text-align: center;"> </div> <p>Ans i) $\angle AOD = \angle BOC$</p> <p style="text-align: center;">ii) $\angle AOB, \angle AOE$</p>	<p>2</p> <p>1m for each</p>
14.	14.	Find the values of the unknowns x and y in the given diagram.	2

		 <p>Ans $y = 80$ (vert opp angles) $x = 50$ (angle sum prop of triangle)</p>	1m for each
		Question 15 and 16 carry three marks each.	2x3
15.	16.	<p>Using an appropriate property, verify</p> <p>A1 : $(-15) \times [(-7) - (-1)] = (-15) \times (-7) - (-15) \times (-1)$</p> <p>Ans LHS $(-15) \times [(-7) - (-1)]$ $= (-15) \times [-6] = 90$</p> <p>RHS $(-15) \times (-7) - (-15) \times (-1)$ $= 105 - 15 = 90$</p> <p>LHS = RHS, Hence verified.</p> <p>A2 : $(-25) \times [(-7) - (-1)] = (-25) \times (-7) - (-25) \times (-1)$</p> <p>Ans LHS $(-25) \times [(-7) - (-1)]$ $= (-25) \times [-6] = 150$</p> <p>RHS $(-25) \times (-7) - (-25) \times (-1)$ $= 175 - 25 = 150$</p> <p>LHS = RHS, Hence verified.</p>	3 1+ ½ for each
16.	15.	<p>In the adjoining figure, $p \parallel q$. Find the unknown angles b, a, e.</p>  <p>Ans $e + 125 = 180$ (linear pair) $e = 55$ deg $a = e$ (corres angles) $a = 55$ deg $b + a = 180$ (linear pair) $b = 125$ deg</p>	3 1m for each
17.	18.	<p>Question 17 and 18 carry four marks each.</p> <p>Find the perimeter of the rectangle whose length is 12 cm and a diagonal is 13 cm.</p> <p>Ans</p>	2x4 4



Perimeter = $2(\text{length} + \text{breadth})$
From the figure given,
 $AB = CD = 12 \text{ cm}$
 $\triangle BCD$ is right angled at C.
So, by using Pythagoras' theorem,
 $BC^2 + DC^2 = BD^2$
Hence, $BC^2 = BD^2 - DC^2$
Now, $BD = 13 \text{ cm}$, $DC = 12 \text{ cm}$
So, $BC^2 = 13^2 - 12^2$
 $\Rightarrow BC^2 = 25 \text{ cm}^2$
 $\Rightarrow BC = 5 \text{ cm}$
Hence, the breadth of the rectangle is 5 cm .
So, perimeter = $2(\text{length} + \text{breadth})$
 $= 2(BC + DC)$
 $= 2(5 + 12)$
 $= 2 \times 17$
 $= 34 \text{ cm}$

Breadth	3m
Perimeter	1m

18.

17.

Consider this data collected from a survey of a colony. Draw a double bar graph choosing an appropriate scale.

Days	Mon	Tues	Wed	Thurs	Fri
Newspaper Readers	400	600	350	550	500
Magazine Readers	150	100	200	300	250

Ans graph

4

4