Delhi Public School, Howrah

Half-Yearly Examination (2024-25)

Class-VII

Care must be taken not to write anything on the question paper. All the questions must be attempted in the correct sequence.

Time: 3 Hours **Subject: Mathematics** **F.M. 80**

A. Select the correct alternative: **[1 × 10 = 10]**

1)

Horizon Glacier is a cold place. The average temperature of the place is less than zero. The maximum and minimum temperature (in °C) recorded for seven days in a week are given below.

What was the lowest temperature recorded in the week?

(a) -8° (b) -12° (c) -21° (d) -24°

2) Shalini, Amber and Anant have dinner together. The bill for the dinner is Rs 3277.50. They divide it among themselves. They have some starters, some drinks and the main course in the dinner. One-third of the bill was for drinks and one-fifth for starters. What amount is paid for the main course?

(a) Rs 409.68 (b) Rs 1092.50 (c) Rs 1529.50 (d) Rs 1748.00

DIRECTION: In the question number **3** and **4**, a statement of Assertion (A) is followed by a statement of Reason (R). Analyse the both statements and choose the correct option.

3) **Assertion (A)** –The ratio of 50 paise to Rs. 1 is 1 : 2.
Reasons (R) –A ratio can be defined as the relationship or comparison between two numbers of the same unit to check how bigger is one number than the other one.

(a) Both Assertion(A) and Reason(R) are true and Reason(R) is the correct explanation of Assertion (A)
(b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion(A)
(c) Assertion (A) is true but Reason (R) is false
(d) Assertion (A) is false but Reason (R) is true

4) **Assertion (A)** –Out of 40 students in a class, 25% passed. Passed students= 10
Reasons (R) –A fraction represents a part of a whole or, more generally, any number of equal parts.

(a) Both Assertion(A) and Reason(R) are true and Reason(R) is the correct explanation of Assertion (A)
(b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion(A)
(c) Assertion (A) is true but Reason (R) is false
(d) Assertion (A) is false but Reason (R) is true

5) Mary played 10 HC matches. She scored 45, 36, 50, 27, 36, 52, 50, 43, 50 and 47 points in them. What is the most frequent score point?

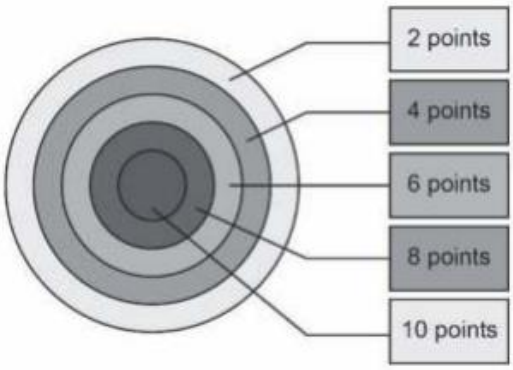
(a) 27 (b) 36 (c) 47 (d) 50

6) If the complement of an angle is 79°, then the angle will be of

(a) 1° (b) 11° (c) 79° (d) 101

7) In the figure given below, the score obtained by Sharmistha can be expressed as:

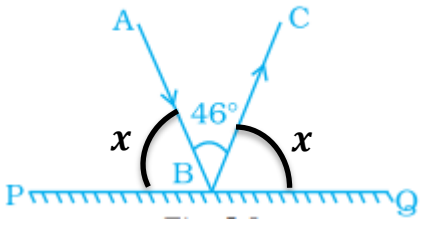
In an archery game, the points scored on hitting a circular region on a board is shown in the figure below.



No point is given when an arrow missed the board. Sharmistha scored only 6 or 4 points in a game. The number of times she scored 6 is five more than the number of times she scored 4. She scored 80 points in the game.

(a) 6x+ 4x= 80 (b) 6x+ 4(x+ 5) =80 (c) 6(x - 5) + 4x= 80 (d) 6x+ 4(x - 5) = 80

8) In the figure given, PQ is a mirror, AB is the incident ray and BC is the reflected ray. If ∠ ABC = 46°, then ∠ ABP is equal to



(a) 44° (b) 67° (c) 13° (d) 62°

9) Out of 50 children in a class, 20 are boys. Then the percentage of girls is

(a) 60% (b) 30% (c) 50% (d) $66\frac{2}{3}\%$

10) The interest on Rs 5000 at the rate of 15% per annum for one month is

(a) Rs 750 (b) Rs 75 (c) Rs 625 (d) Rs 62.50

B. Fill in the blanks: **[1 × 10 = 10]**

1) [(– 10) × (+ 9)] + (– 10) is equal to_____
2) The two non-zero fractions whose product is 1, are called the _____ of each other.
3) The difference between the highest and the lowest observations of a data is called _____.
4) If the pair of lines are parallel, sum of interior angles on the same side of a transversal is _____.
5) Sum of two numbers is 81. One is twice the other. The equation formed is _____.
6) The supplement of an acute is always _____ angle.
7) Median is also called_____ in an equilateral triangle.
8) 7÷1000 _____.
9) Interest earned on Rs 3000 at 10% per annum for a period of 3 years is_____.
10) 24:36 as percentage can be written as_____.(upto two decimal places)

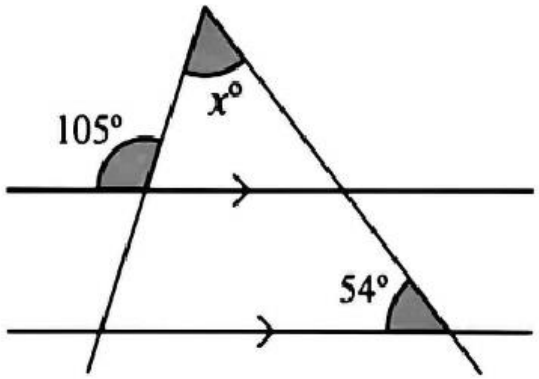
C. Rewrite the false statements correctly: **[1 × 5 = 5]**

1. 8 hours is 50% of 4 days.
2. 0.018 is equivalent to 8%
3. The sum of the measures of three angles of a triangle is greater than 180°.
4. Vertically opposite angles form a linear pair.
5. The equation 4x – 5 = 7 does not have an integer as its solution.

D. Solve the following problems: **[2 ×10 = 20]**

1) If one side of a square is represented by 18x – 20 and the adjacent side is represented by 42 – 13x, find the length of the side of the square.

2) In the given figure, find the angle x.



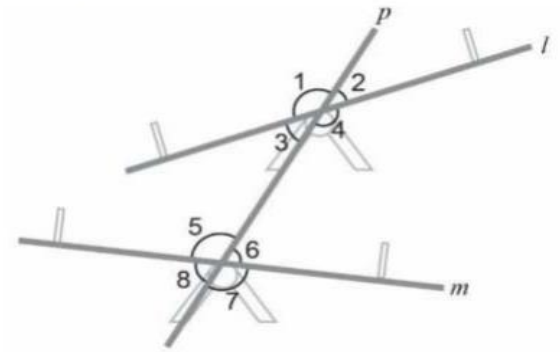
3) Express $16\frac{2}{3}$ % as a fraction in the lowest form.

4) Sides of a right triangle are 20 cm and 21 cm, find its hypotenuse.

5) The cost of per litre petrol in New Delhi on 11 August, 2023 was Rs. 101.84. On the same day, the cost of one litre of liquefied gas was 60% less than the cost of petrol in New Delhi. What was the cost of liquefied gas on that day?

6)

A diagram of a see-saw is given below.

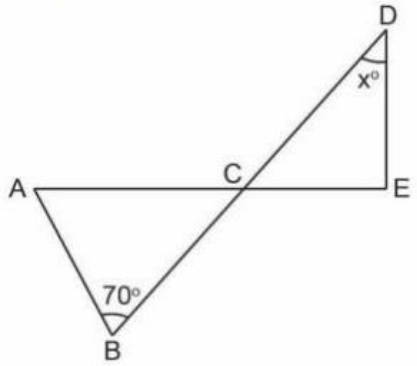


a) State all the pairs of vertically opposite angles in the given figure.

b) Name the two pairs of alternate exterior angles?

7)

In the triangle ABC below, AC = BC.
In the triangle DCE, ∠CED = 90°.



What is the value of 'x'?

8) Multiple gaming tournaments can be played online. In these games, players can compete with players from any part of the world. In a tournament, 200 points are awarded for a win and 20 points are deducted for a loss.

Chetan participated in the tournament. He won two more matches than the number of matches he lost. He scored 1120 points. How many matches did he play?

9) Find the reciprocal of the following expression:

$$\left(\frac{1}{2}\times\frac{1}{4}\right)+\left(\frac{1}{2}\times 6\right)$$

10) Find the value of x in the given equation. at $a=-3$ and $b=4$

5x-a = b + 3

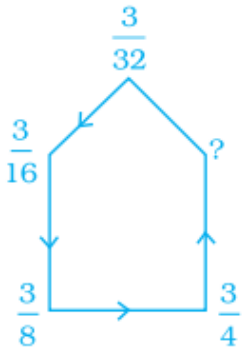
E. Solve the following problems: **[3 × 5 = 15]**

1. Find the mean, median and mode of the data:

23, 18, 24, 23, 31, 37, 28, 30, 25, 40, 35, 35, 27,25,24

2. Replace '?' with an appropriate fraction.

a)



b) A father leaves his money to his four children. The first received $\frac{1}{3}$, the second received $\frac{1}{6}$, and the third received $\frac{2}{5}$. How much did the remaining child receive?

3. Liquefied gases contain gases like Butane and Propane. The percentage of both Butane and Propane in liquefied gas varies from 100% of Propane to 20% of Propane. One litre of liquefied gas weigh 510g in which mass of Propane gas is 357g.Find the percentage of Propane gas in 1 litre of liquefied gas.

4. In a class test containing 10 questions, 5 marks are awarded for every correct answer and (− 2) marks are awarded for every incorrect answer and 0 for questions not attempted.

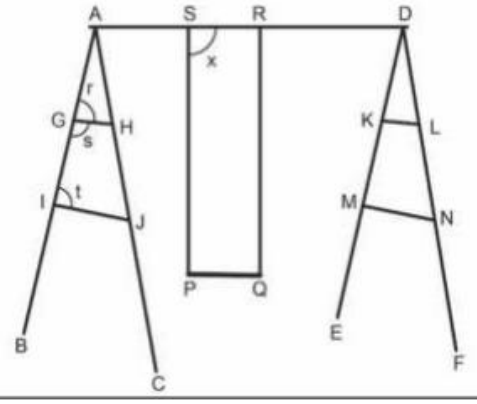
(i) Mohan gets four correct and six incorrect answers. What is his score?

(ii) Reshma gets five correct answers and five incorrect answers, what is her score?

(iii) Heena gets two correct and five incorrect answers out of seven questions she attempts. What is her score?

5.

In the figure given below, AD is a straight line. PS and QR are perpendicular to AD.
GH is parallel to IJ and KL is parallel to MN.



i) What type of angles are ∠r and ∠t?

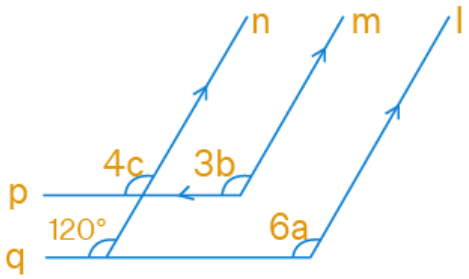
(a) Adjacent angles (b) Vertically opposite (c) Corresponding angles (d) Alternate exterior angles

ii) The measure of ∠s = 120°.What is the measure of ∠t?

iii) Why are the lines SP and RQ parallel to each other?

F. Solve the following problems: [4 × 3 = 12]

1) In the following figure, l, m and n are parallel lines, and the lines p and q are also parallel.
Find the value of (a + b – c).



2) Length and breadth of a bulletin board are r cm and t cm, respectively.

(i) What will be the length (in cm) of the aluminum strip required to frame the board, if 10 cm extra strip is required to fix it properly.

(ii) If x nails are used to repair one board, how many nails will be required to repair 15 such boards?

(iii) If 500 sq. cm extra cloth per board is required to cover the edges, what will be the total area of the cloth required to cover 8 such boards?

(iv) What will be the expenditure for making 23 boards, if the carpenter charges Rs x per board.

3) The performance of students in 1st term and 2nd term is as given below. Draw a double bar graph choosing appropriate scale, and answer the following:

Subject:	English	Hindi	Maths	Science	S.Science
1st term:	67	72	88	81	73
2nd term:	70	65	95	85	75

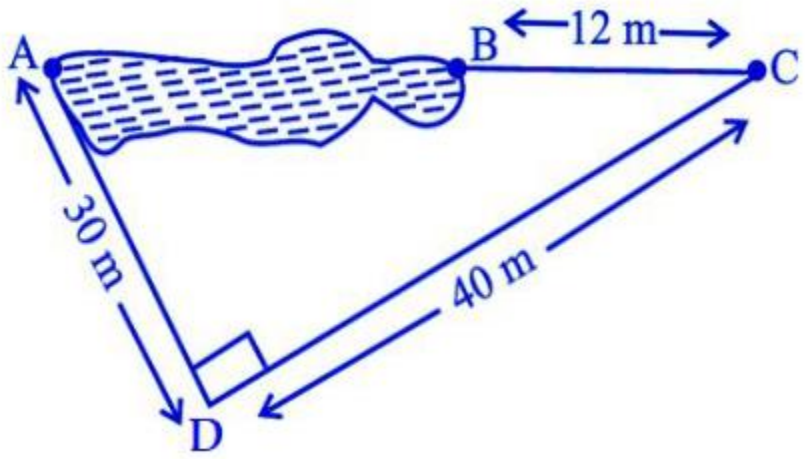
(i) In which subject, have the children improved their performance the most?

(ii) Has the performance gone down in any subject?

G. Read the following case studies carefully and solve the following problems:

CASE STUDY 1

Points A and B are on the opposite edges of a pond as shown in the figure given below. To find the distance between the two points, Ram makes a right-angled triangle using rope connecting B with another point C at a distance of 12 m, connecting C to point D at a distance of 40 m from point C and then connecting D to the point A which is at a distance of 30 m from D such that ∠ADC = 90°.



(a) Which property of geometry will be used to find the distance AC? **(1)**

(i) Similarity of Triangles (ii) Thales Theorem

(iii) Pythagoras Theorem (iv) Quadratic Equation

(b) What is the distance AC? **(1)**

(i) 50 m (ii) 12 m (iii) 100 m (iv) 70 m

(c) Which is the following does not form a Pythagoras triplet? **(1)**

(i) (7, 24, 25) (ii) (15, 8, 17) (iii) (5, 12, 13) (iv) (21, 20, 28)

(d) Find the length AB. **(1)**

(i) 12 m (ii) 38 m (iii) 50 m (iv) none of these

(e) Find the length of the rope used. **(1)**

(i) 120 m (ii) 70 m (iii) 82 m (iv) none of these

CASE STUDY 2

Miraya is calling a few friends to her home. She wanted to purchase a few bakery items for them. She prepared a list of all the items that she had to buy.

Item	Quantity Required
(i) Patties	6
(ii) Muffins	4
(iii) Bread rolls	2
(iv) Box of candles	1

Her father gave her a 500 – rupee note and she went to the bakery to buy these items. At the bakery, each patty costs ₹ 22.50, each muffin costs ₹ 11.75, each bread roll costs ₹17.25 and the box of candles costs ₹54.25.

(1) What was the total bill that Miraya paid at the bakery? **(1)**

(2) When Miraya gave the 500 – rupee note to the bakery owner, what amount did she get in return after paying the bakery bill? **(1)**

(3) On her way back, Miraya bought 7 ice creams, each costing ₹16.75. How much did she spend on the ice creams? **(1)**