

ST MATH CHALLENGE 2023

Sample Paper

Group-1 (Class 7 & 8)

Instructions:

1	The duration of the competition is 90 minutes.
2	30 problems to solve: Fifteen – 2 points each, Ten – 4 points each and Five – 6 points each.
3	Calculators are not allowed. You may use basic geometric tools.

2 Point Problems

1. In 2023 Naheed's annual income was Rs:22 000.

She spent Rs:7260 on accommodation in 2023.

Calculate the percentage of her income she spent on accommodation.

A	23%
B	33%
C	43%
D	53%

2. Jameel jogged around the track 16 times. Each lap is 400 meters.

Which process could determine the total distance he jogged?

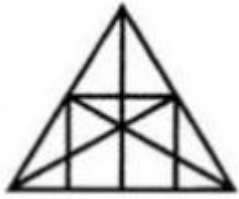
A	add 16 and 400
B	divide 400 by 16
C	multiply 400 by 16
D	subtract 16 from 400

3. Zahid's bike tire has a radius of 8 inches.

Which equation is used to find the circumference of the tire in inches?

A	$C = \pi \cdot 4$
B	$C = \pi \cdot 16 \times 2$
C	$C = \pi \cdot 16$
D	$C = \pi \cdot 8$

4. Count the minimum number of straight lines in the following figure.



A	8
B	9
C	10
D	12

- A. 8
- B. 9
- C. 10
- D. 12

4 Point Problems

1. A rectangular swimming pool has a length of 10 m and width of 8 m. The water in the pool has a depth of 6 m. The water in the pool has a depth of 6 m. If you add 40 m³ of water to the pool, how much the depth of water increase.

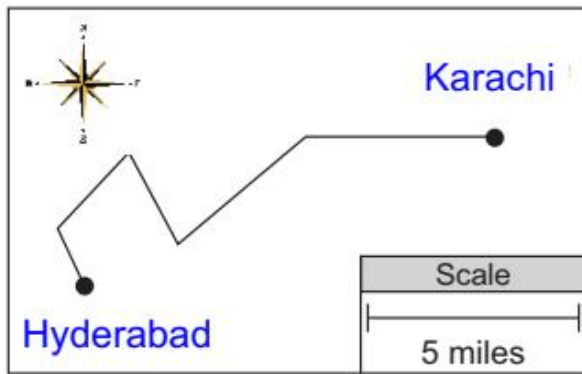
A	2cm
B	6cm
C	1m
D	2m

2. The number of calories in one serving of any food is the sum of the calories from fat, protein, and carbohydrate. The table shows the calories in 1 gram of each of the three food components. A serving of cheddar cheese contains 14 grams of fat, 11 grams of protein and 1 gram of carbohydrate. How many calories are in a serving of cheddar cheese?

Component	Calories in 1 gram
Fat	9
Protein	4
Carbohydrate	4

A	70 calories
B	141 calories
C	174 calories
D	234 calories

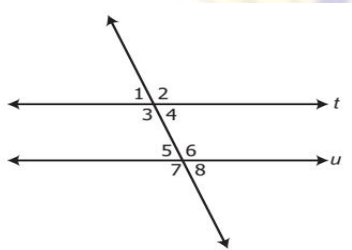
3. Rohan rode his bicycle from Hyderabad to Karachi and back on the bicycle path shown on the map.



Which is closest to the round trip distance Rohan traveled?

A	6
B	15
C	24
D	30

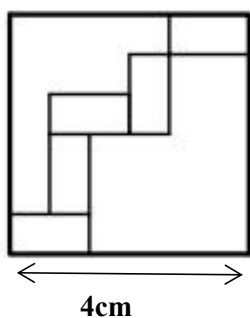
4. Parallel Lines t and u when cut by Transversal v form eight angles, as shown in the diagram below.



If the measure of Angle 2 is 112° , what is the measure of 5?

A	68°
B	72°
C	114°
D	248°

6 Point Problems



1. What is the area of one rectangle?

A	32 cm ²
B	16 cm ²
C	18 cm ²
D	None of the above

2. Laiba and Maryam compete in solving problems. Each of them is given the same list of 100 problems. For any problem, the first of them to solve it gets 4 points, while the second to solve it gets 1 point. Laiba solved 60 problems, and Maryam also solved 60 problems. Together, they got 312 points. How many problems were solved by both of them?

A	53
B	54
C	55
D	56

3. Daniyal rides his bicycle from Abdullah to his croft. He was going to arrive at 15:00, but he spent $\frac{2}{3}$ of the planned time covering $\frac{3}{4}$ of the distance. After that, he rode more slowly and arrived exactly on time. What is the ratio of the speed for the first part of the journey to the speed for the second part?

A	5 : 4
B	4 : 3
C	3 : 2
D	3 : 1

