



MISMO
Maarif Inter School Maths Olympiad

An initiative of



PAK-TURK MAARIF
INTERNATIONAL SCHOOLS & COLLEGES



MISMO 2022

Syllabus and Sample Questions – Grade 6

For Detailed Information Login to:  www.mismo.pk

MISMO Syllabus– Grade 6

MISMO Content Assessment Percentage

Content Domains	Percentages
Numbers and Algebra	50%
Measurement and Geometry	30%
Data Handling	20%

Numbers and Algebra

Integers

- Demonstrate understanding of properties of numbers and operations;
- Differentiate between prime and composite numbers
- Find factors, prime factors, and express factors in index notation
- Identify and list all the perfect squares and cubes between a given range
- Find square roots and cube roots of the given numbers
- Find the HCF and LCM of two or more given set of numbers
- Solve word problems involving HCF and LCM
- Represent negative numbers on a number line
- Order positive and negative integers, decimals and fractions;
- Solve word problems involving addition, subtraction, multiplication and division of integers
- Perform operations on real numbers

Fractions and Decimals

- Using various models and representations, compare and order fractions and decimals, and identify equivalent fractions and decimals.
- Solve problems involving fractions and decimals in real life situations.
- Round off numbers to the required number of decimal places.

Ratio, Proportion, and Percentage

- Identify and find equivalent ratios; model a given situation by using a ratio; divide a quantity according to a given ratio.
- Solve problems involving proportions or percentages, including converting between percentages and fractions or decimals.

Algebra

Expressions, Operations, and Equations

- Recognise and continue number patterns along with real-life situations.
- Evaluate, expand, simplify and factorize linear algebraic expressions by extracting common factors
- Solve linear equations in one variable
- Write expressions, equations, to represent problem situations.

Relationships and Functions

- Interpret, relate and generate representations of linear functions in tables, graphs, or words; identify properties of linear functions including slope and intercepts.
- State, Interpret and plot a point in a Cartesian plane.
- Solve problems involving points in the Cartesian plane.
- Find the value of y when x is given from the equation of a function and vice versa.

Measurement and Geometry

Measurement

- Solve problems involving angles formed by two parallel lines and a transversal i.e corresponding angles, alternate angles and interior angles
- Solve problems involving properties of triangles
- Identify two-dimensional shapes (parallelogram, triangles, and trapeziums) and use their geometric properties to solve problems,
- Calculate the perimeter and area of squares, rectangles, triangles, circles, semicircles.
- Identify three-dimensional shapes (cubes and cuboids) and use their geometric properties to solve problems.
- Calculate surface area and volume of cubes and cuboids; relate three-dimensional shapes with their two-dimensional representations; and use their geometric properties to solve problems.

Data handling

Reading, Interpreting and Representing Data

- Identify appropriate procedures for collecting data;
- organize and represent data to answer questions.
- Represent discrete data using suitable graphs such as bar graphs, multiple bar graphs, and pie charts.



MISMO 2022
SAMPLE QUESTIONS

Sample Questions MISMO 2022 – Grade 6

1. Look at this sequence of numbers.

1 2 4 8 16 32 64...

The sequence continues. The number 512 is in the sequence.

What number comes immediately before 512?

- A. 128
- B. 256
- C. 343
- D. 421

2. Ammara has 360 marbles. She gives 15% of her marbles to friends.

How many marbles does she give away?

- A. 54
- B. 108
- C. 180
- D. 270

3. I am thinking of a 3-dimensional shape.

It has 5 sides. 4 sides are triangles and 1 side is a square.

It has 8 edges and 5 vertices.

- A. Cube
 - B. Cone
 - C. Pyramid
 - D. Cylinder
4. A square board game has an area of 2500cm^2 . What is the perimeter of the board?
- A. 100 cm
 - B. 200 cm
 - C. 300 cm
 - D. 400 cm

5. In a T-20 match, Karachi Kings won 12 out of 20 matches. Write $\frac{12}{20}$ as a decimal.

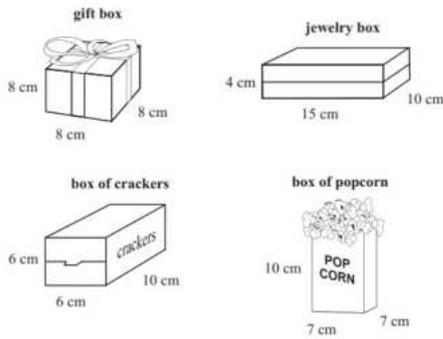
- A. 0.5
- B. 0.6
- C. 0.7
- D. 0.8

6. A pink gold bracelet is made from 30 g of gold, 8 g of copper and 2 g of silver.

Write the ratio of gold : copper : silver in its simplest form.

- A. 15 : 8 : 2
B. 15 : 4 : 2
C. 30 : 8 : 2
D. 15 : 4 : 1
7. The ratio of chilli to garlic in a recipe is 1 : 3.
Sara uses 4 teaspoons of chilli.
How many teaspoons of garlic does she use?
- A. 4
B. 8
C. 12
D. 16
8. In the Olympic games the marathon is 26.22 miles.
How far is this in kilometres? (1 mile = 1.6 km)
- A. 40.21
B. 41.95
C. 42.34
D. 46.81
9. One day, the temperature at midday is 9°C .
At midnight the temperature has dropped by 15.3°C .
Find the temperature at midnight.
- A. 06.3
B. -06.3
C. 24.3
D. -24.3
10. A basket contains some apples and oranges.
 $\frac{5}{12}$ of the fruits are apples. There are 10 apples.
How many apples and oranges are there altogether?
- A. 14
B. 24
C. 34
D. 44

11. Use the pictures below to answer the question.



Which box has the greatest volume?

- A. gift box
 - B. jewelry box
 - C. box of popcorn
 - D. box of crackers
12. A rectangular field measures 30 m by 45 m.
Calculate the perimeter.
- A. 105 m
 - B. 120 m
 - C. 135 m
 - D. 150 m
13. Yasmin has saved \$185 in her savings account.
She withdraws $\frac{1}{5}$ of this money to spend. How much money does she withdraw?
- A. 35
 - B. 36
 - C. 37
 - D. 40
14. Jamila does a long jump of 3.45 metres.
Give this distance in centimetres.
- A. 34.5 cm
 - B. 345 cm
 - C. 0.345 cm
 - D. 3450 cm

Kamran plays cricket.

In three innings, he scores a total of 125 runs.



15. If he scores 15 runs in his 1st innings, and 74 runs in his 2nd innings, how many runs does he score in his 3rd innings?

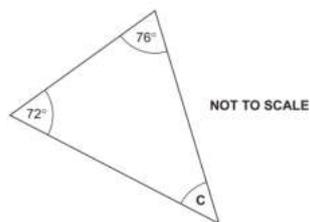
A. 30
B. 36
C. 114
D. 214

16. In Kamran's 4th innings, he scored 99 runs.

What is his total number of runs scored after 4 innings?

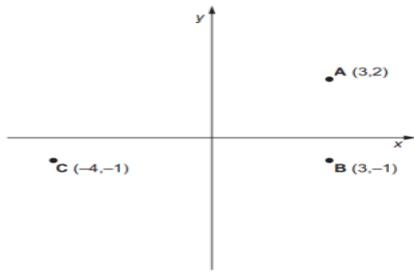
A. 188
B. 818
C. 224
D. 242

17. Here is a diagram of a triangle. Calculate c .



A. 74°
B. 34°
C. 32°
D. 70°

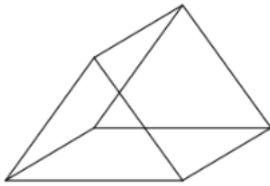
18. A, B and C are three vertices of a rectangle.



What are the co-ordinates of the fourth vertex?

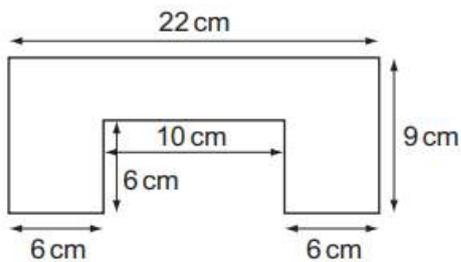
- A. $(-4, 2)$
- B. $(4, 2)$
- C. $(4, -2)$
- D. $(-4, -2)$

19. Look at the drawing of the triangular prism.
How many rectangular faces does it have?



- A. 2
- B. 3
- C. 4
- D. 5

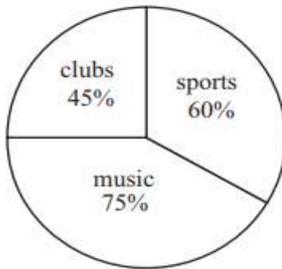
20. Calculate area of this shape.



- A. 68 cm^2
- B. 112 cm^2
- C. 138 cm^2
- D. 140 cm^2

21. Use the graph and table below to answer the question.

Involvement in Activities



Involvement in Activities

Activity	Number of Students
clubs	45
music	75
sports	60

The circle graph shows the percent of students involved in each activity.

The table shows the number of students in each activity.

Which statement is caused by a misrepresentation of data in the circle graph?

- A. Students are involved in clubs the least.
- B. Students are involved in music the most.
- C. Students are involved in three activities.
- D. Students are involved in 180 percent of the activities.