



CREST Mental Maths Olympiad (CMMO)

Sample Paper

Pattern and Marking Scheme

Grade	Topic/Section	No. of Questions	Marks per Question	Total Marks
Grade 6	Basique	80	3	240
	Avance	20	6	120
Grand Total		100		360

The total duration of the exam is 60 minutes.

Note: For every incorrect answer, there's a penalty of $\frac{1}{3}$ rd of the total marks allotted to that question.

Syllabus

Knowing Our Numbers

- System of numeration
- Comparison of numbers
- Estimation of numbers and place value of a number
- BODMAS rule
- Whole numbers
- Properties of whole numbers

Integers

- Integers
- Addition and subtraction of integers on number line
- Properties of integers over addition, subtraction, multiplication, division

Fractions and Decimals

- Fractions: Operations and types
- Ascending and descending order of the fractions
- Decimals and their place values
- Operations on decimals

- e. Decimal fractions
- f. Ascending and descending order of the decimals

Algebra

- a. Variables and constants
- b. Algebraic expressions

Playing With Numbers

- a. Factors and multiples
- b. Prime numbers
- c. Composite numbers
- d. Divisibility rules
- e. Prime factorization
- f. H.C.F. and L.C.M.
- g. Play with patterns

Understanding Elementary Shapes

- a. Lines and angles
- b. Classification of triangles, circle & quadrilateral
- c. Polygons
- d. 3D shapes

Mensuration

- a. Perimeter of rectangle
- b. Perimeter of square
- c. Perimeter of triangle
- d. Perimeter of closed figures
- e. Area of rectangle, square and combined figures

Data Handling and Symmetry

- a. Pictographs, line graph and bar graph
- b. Symmetry - Point & Reflection

Comparing Quantities

- a. Percentage
- b. Speed, time and distance
- c. Profit and loss
- d. Problems on ages
- e. Average
- f. Ratio and proportion

For more details, visit <https://www.crestolympiads.com/mental-maths-mmo>

Basique (Each Question is 3 Marks)

- How much time will Robert spend practicing the piano in 10 days, if he practices for $\frac{3}{4}$ of an hour each day?
 - 5 hours
 - 6.5 hours
 - 7.5 hours
 - 8 hours
- Identify the sequence which is in increasing order:
 - $10.05 < 10.35 < 10.53 < 10.5$
 - $10.5 < 10.53 < 10.35 < 10.05$
 - $10.05 < 10.35 < 10.5 < 10.53$
 - $10.53 < 10.05 < 10.5 < 10.35$
- Which of the following numbers are divisible by 14?
 - 35968
 - 47936
 - 57024
 - 87088
- What is the largest four-digit number that is divisible by 15, 25, 40, and 75?
 - 9600
 - 9700
 - 9800
 - 9900
- If there are 50 seats in a cinema hall and 60% of them are occupied, how many seats are empty?
 - 5 seats
 - 10 seats
 - 15 seats
 - 20 seats
- If a store had 100 items in stock and 20% of them were sold, how many items are left in the store?
 - 70
 - 80
 - 90
 - 100
- If a father's age is five times his son's age, and four years ago, the father was nine times older than his son, what is the father's current age?
 - 30 years
 - 36 years
 - 40 years
 - 48 years
- If Stalin earned \$14, \$16, \$18, \$20, \$22, \$24, and \$26 on consecutive days in a week, what is his average daily earning?
 - \$18
 - \$20
 - \$22
 - \$24

18. Which of the fractions is the greatest fraction?

- a. 1
- b. 2
- c. 3
- d. 0

19. Fill in the missing number:

$$8870 \times 461 - 8870 \times 361 = \underline{\hspace{2cm}}.$$

- a. 870000
- b. 887900
- c. 889300
- d. 887000

20. Fill in the missing number:

$$10 - [100 - (89 + 5 \div 5)] = \underline{\hspace{2cm}}.$$

- a. 134
- b. 114
- c. 10
- d. 0

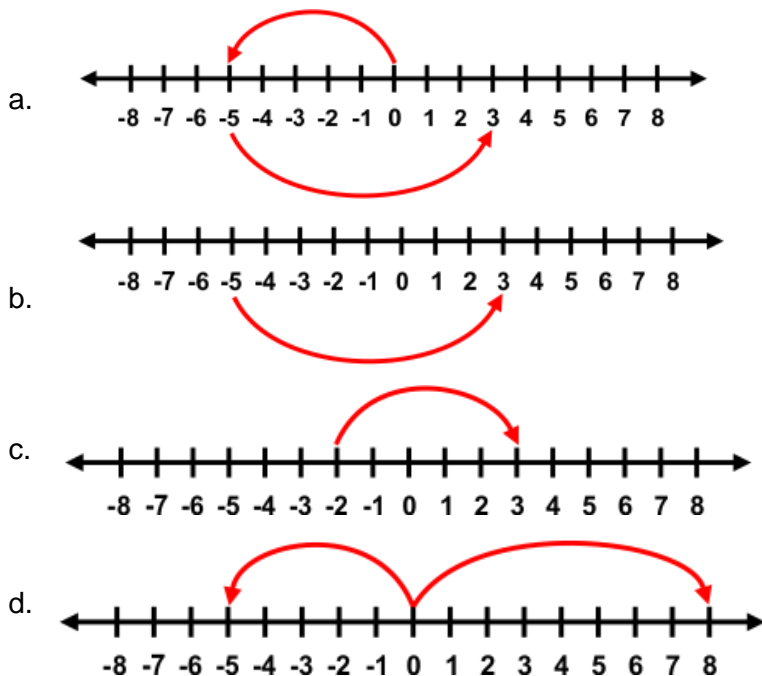
21. Fill the missing number:

$$\underline{\hspace{2cm}} \times 4 = 12 \times 20$$

- a. 70
- b. 60
- c. 65
- d. 75

22. Use the number line and solve:

$$(-5) + 8$$



53. What is the shape of the book?

- a. Cube
- b. Cuboid
- c. Square
- d. Rectangle

54. Give the name of a polygon with three sides.

- a. Square
- b. Triangle
- c. Rhombus
- d. Circle

55. What is the name of a 3D shape with 6 square faces?

- a. Cone
- b. Cube
- c. Cylinder
- d. Square

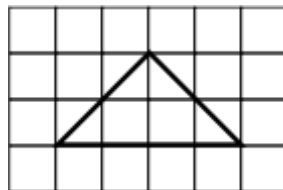
56. Find the perimeter of rectangle whose length = 5 cm, breadth = 50 cm.

- a. 55 cm
- b. 50 cm
- c. 105 cm
- d. 110 cm

57. Calculate the perimeter of the square of side 0.01 m.

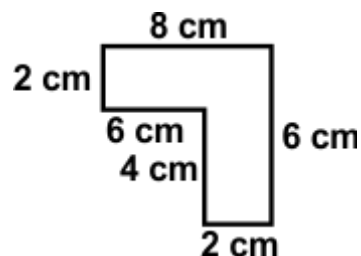
- a. 0.04 m
- b. 0.01 m
- c. 0.1 m
- d. 0.0001 m

58. Find the area of the figure by counting squares:



- a. 16 units
- b. 4 units
- c. 9 units
- d. 12 units

59. Find the perimeter of the figure: -

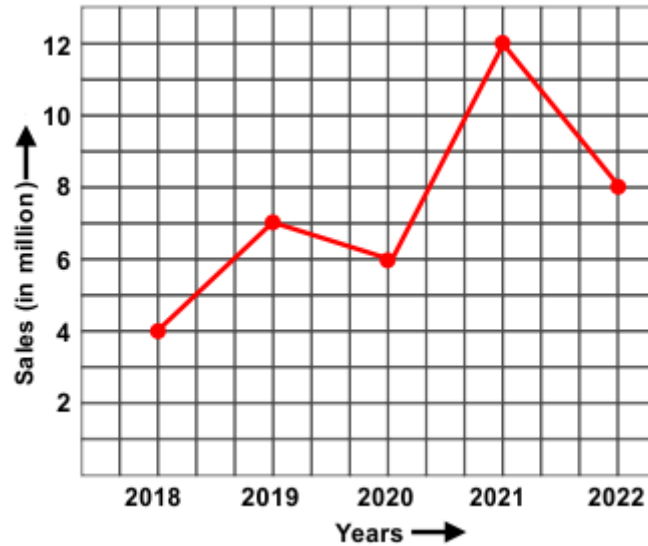


- a. 35 cm
- b. 43 cm
- c. 28 cm
- d. 18 cm

- a. i – 100, ii - 40
c. i – 50, ii - 80

- b. i – 50, ii - 50
d. i – 50, ii - 30

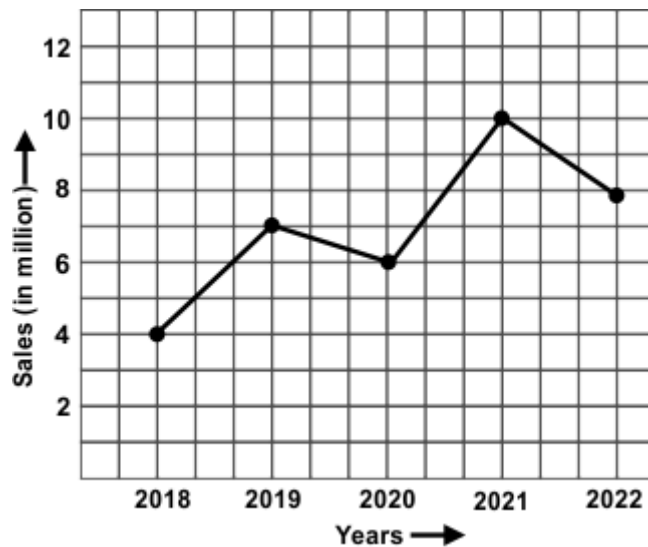
66. The line graph shows the yearly sales figure for a manufacturing company. What were the sales in (i) 2018 (ii) 2022?



- a. i – 2 million, ii - 6 million
c. i – 4 million, ii - 8 million

- b. i – 1 million, ii - 3 million
d. i – 8 million, ii - 3 million

67. The line graph shows the yearly sales figures of a manufacturing company. What were the sales in 2021?



- a. 5 million
c. 10 million

- b. 8 million
d. 7 million

68. Study the given pictograph and answer the questions:

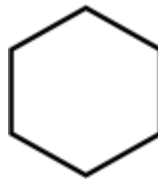
- Which school has the greatest number of children?
- How many children in all are there in four schools?



☺ = 100 children

- a – school 1, b – 2200 children
- a – school 2, b – 1200 children
- a – school 4, b – 2200 children
- a – school 3, b – 220 children

69. Find the number of lines of symmetry shape:



- 6 lines
- 4 lines
- 8 lines
- 2 lines

70. Given here is a figure of a folded sheet and a design drawn about the fold. Select the complete figure that would be seen when the design is cut off.



-
-
-
-

71. A bus takes 3 hours to travel a distance of 180 km. What is the speed of the bus?

- 70 km/h
- 50 km/h
- 90 km/h
- 60 km/h

86. Compare the values of the following fractions, use symbols to indicate the result:

$$\frac{2}{3}, \frac{2}{5}, \frac{2}{9}$$

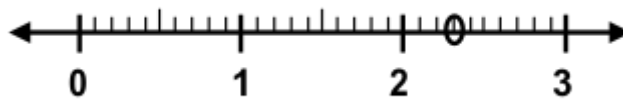
a. $\frac{2}{3} > \frac{2}{5} > \frac{2}{9}$

b. $\frac{2}{3} < \frac{2}{5} > \frac{2}{9}$

c. $\frac{2}{3} < \frac{2}{5} < \frac{2}{9}$

d. $\frac{2}{3} > \frac{2}{5} = \frac{2}{9}$

87. Choose the correct decimal from the given number line:



- a. 2.3
c. 2.7

- b. 4.5
d. 2.4

88. Fill in the blank:

The quotient of x and y added to four times the product of x and y is _____.

- a. $x/y + 4y$
c. $x + 6y$

- b. $2x/y + 34$
d. $x/y + 4xy$

89. Which of the following numbers is divisible by 11?

37468, 21358, 354872, 82907

- a. 354872
c. 21358

- b. 37468
d. 82907

90. If the measurements of sides are 2 cm, 2 cm, 2 cm, and measure of angles of the triangle are 60° , 60° , and 60° then what type of triangle is this?

- a. Right angle triangle
c. Scalene triangle

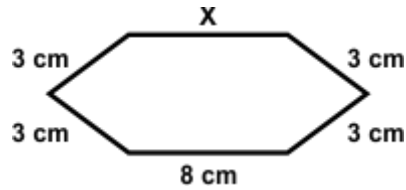
- b. Isosceles triangle
d. Equilateral triangle

91. In triangle ABC, angle A measures 60° and angle B measures 90° . What is the measure of angle C?

- a. 60°
c. 30°

- b. 40°
d. 45°

92. The perimeter of the given figure is 26 cm. Find the length of x.

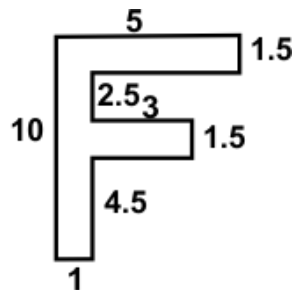


- a. 8 cm
- b. 6 cm
- c. 9 cm
- d. 11 cm

93. The side of a square tile is 10 cm. How many tiles can be fixed on one side of a wall which is 300 cm long and 200 cm high?

- a. 800
- b. 700
- c. 900
- d. 600

94. Find the area of the figure (taking the unit in cm).



- a. 20.5 cm²
- b. 24 cm²
- c. 23.1 cm²
- d. 23.23 cm²

95. Name the figure which has six faces and equal edges.

- a. Cylinder
- b. Cone
- c. Cuboid
- d. Cube

