

MUMBAI MATH CHAMPIONSHIP

MOCK TEST – Grade 7

Total Marks: 100

Time Duration: 1 hour

Section: Logical Reasoning

Q1. (Number system)

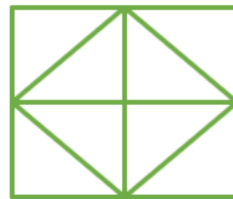
Which will come next in the series?

216, 343, 512, 729, ?

- A. 1,331
- B. 1,000
- C. 1,728
- D. 2,197

Q2. (Understanding shapes)

Count the number of triangles in the given image:



- A. 12
- B. 14
- C. 16
- D. 18

Q3. (Calendar)

Today is Monday. What day it will be after 36 days?

- A. Saturday
- B. Thursday

- C. Tuesday
- D. Friday

Q4. (Fractions)

Choose the option, which shows the next step of simplifying the given expression:

$$\frac{8}{9} - \frac{6}{5}$$

- A. $\frac{8}{9} \times \frac{5}{5} \times \frac{6}{5} \times \frac{9}{9}$
- B. $\frac{8}{9} \times \frac{6}{5} \times \frac{6}{5} \times \frac{8}{9}$
- C. $\frac{8}{9} \times \frac{8}{9} \times \frac{6}{5} \times \frac{6}{5}$
- D. $\frac{8}{9} \times \frac{1}{5} \times \frac{6}{5} \times \frac{1}{9}$

Q5.(Mensuration)

Kevin made a square by bending a piece of wire. He re-bent the same piece of wire to make a circle. If the radius of the so formed circle is 70 cm, then find the side of the square.

- A. 140 cm
- B. 130 cm
- C. 120 cm
- D. 110 cm

Q6. (Blood relations)

Pointing to a photograph of a woman Alisha said, “She is the mother of my only brother’s sister”. How is Alisha related to that woman?

- A. Sister-in-law
- B. Daughter
- C. Mother
- D. Sister

Q7. (Integers)

Choose the odd one out:

- A. 63
- B. 80



- C. 26
- D. 99

Q8. (Integers)

Find the missing term in the given sequence:

888, 454, ? , 128.5

- A. 237
- B. 236
- C. 235
- D. 234

Q9. (Decimals)

$210.012 \times 11.11 = ?$

- A. 2,333.2332
- B. 2,333.3332
- C. 233.23332
- D. 2,333.23332

Q10. (Numbers System)

Which of the following signs are missing?

$30\ 8\ 6\ 1\ 2 = 25$

- A. -, +, ÷, ×
- B. ×, ÷, +, -
- C. -, +, ×, ÷
- D. ×, -, +, ÷

Section: Mental Maths

Q11. (Integers)

What is the difference between -50 and 50?

- A. 50
- B. -50

- C. 0
- D. 100

Q12. (Geometry)

Find the complement of 62° .

- A. 62°
- B. 26°
- C. -62°
- D. 28°

Q13. (Geometry)

Which of the following is best described in the given image?



- A. Ray
- B. Linear Pair
- C. Point
- D. Parallel lines

Q14. (Mensuration)

What will be the perimeter of a regular heptagon of side 3.5 cm.?

- A. 24.5 cm
- B. 23.5 cm
- C. 22.5 cm
- D. 21.5 cm

Q15. (Integers)

The sum of two integers is 82. Find the other integer, if one of the integers is -30.

- A. 52
- B. -52
- C. 112
- D. -112

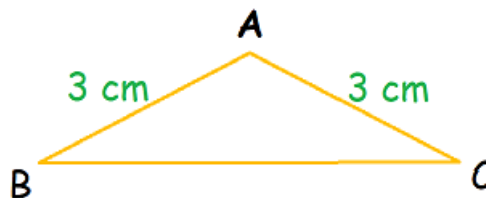
Q16. (Fractions)

What should be added to $15\frac{3}{6}$ to get $31\frac{27}{30}$?

- A. $16\frac{7}{30}$
- B. $16\frac{17}{60}$
- C. $16\frac{7}{10}$
- D. $16\frac{2}{5}$

Q17. (Geometry)

Which angles are equal in the ΔABC ?



- A. Angle A and B
- B. Angle B and C
- C. Angle C and A
- D. All three angles are equal

Q18. (Exponents)

Write the simplified exponential form for the given expression:

$$3^2 \times 3^0 \times 3^{-2} \times 3^6 \times 3^4 \times 3^{-8} \times 3^{10} \times 3^{-12} \times 3^{10}$$

- A. 3^{10}
- B. 3^{12}
- C. 3^{-10}
- D. 3^{-12}

Q19. (Mensuration)

The side of a square is 7 cm. Would it hold larger area than a circle with 7 cm radius?

- A. No
- B. Yes

- C. Both shapes will have equal areas
- D. Cannot be determined

Q20. (Data handling)

What will be the mean of first 7 even numbers?

- A. 12
- B. 11
- C. 10
- D. 8

Q21. (Algebra)

Find the value of the algebraic expression, if $x = (-1)$.

$$12x^3 - 10x^2 - 8x^1$$

- A. 14
- B. -14
- C. 6
- D. -6

Q22. (Rational numbers)

$\frac{-36}{-228}$ expressed in simplest form is:

- A. $\frac{18}{57}$
- B. $-\frac{18}{57}$
- C. $\frac{9}{57}$
- D. $-\frac{9}{57}$

Q23. (Number system)

The simplified form of $\sqrt[6]{64}$ is:

- A. 1.66
- B. 0
- C. 1
- D. 2

Q24. (Symmetry)

Choose the incorrect statement:

- A. A line that divides a figure into two identical shapes is called symmetrical line.
- B. Complete rotation is 360°
- C. Figure having no line of symmetry cannot have rotational symmetry
- D. There may be more than one lines of symmetry.

Q25. (Rational numbers)

Which of these rational numbers does not lie between -1 and 1?

- A. $\frac{8}{6}$
- B. $\frac{2}{4}$
- C. $\frac{9}{6}$
- D. $\frac{5}{6}$

Section: Maths

Q26. (Integers)

Determine the value of:

$$900 \times 800 - (-700) + 600 \times 500 - (-400) + 300$$

- A. 10,21,500
- B. 10,21,400
- C. 10,21,300
- D. 10,21,200

Q27. (Fractions)

Arrange the following fractions in descending order:

$$\frac{7}{80}, \frac{18}{80}, \frac{9}{80}, \frac{27}{80}, \frac{80}{80}$$

- A. $\frac{80}{80}, \frac{27}{80}, \frac{18}{80}, \frac{9}{80}, \frac{7}{80}$
- B. $\frac{80}{80}, \frac{18}{80}, \frac{9}{80}, \frac{7}{80}, \frac{27}{80}$
- C. $\frac{27}{80}, \frac{7}{80}, \frac{18}{80}, \frac{9}{80}, \frac{80}{80}$

D. $\frac{7}{80}, \frac{9}{80}, \frac{18}{80}, \frac{27}{80}, \frac{80}{80}$

Q28. (Fractions)

Simplify:

$$\frac{8}{5} + \frac{1}{6} - \frac{9}{7}$$

- A. $\frac{641}{210}$
- B. $\frac{111}{210}$
- C. $\frac{101}{210}$
- D. $\frac{210}{101}$

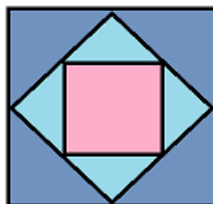
Q29. (Data handling- Probability)

A dice has been rolled once. What is the probability of getting an even number?

- A. $\frac{3}{2}$
- B. $\frac{3}{8}$
- C. $\frac{1}{2}$
- D. $\frac{1}{6}$

Q30. (Geometry- Symmetry)

Identify the number of lines of symmetry for the given figure:



- A. 8
- B. 4
- C. 6
- D. 2

Q31. (Number System)

Choose the rational number whose numerator is $(-8) \times 2$, and whose denominator is $(91 - 80) \times (10 - 5)$.

- A. $\frac{16}{55}$
- B. $\frac{-16}{55}$
- C. $\frac{16}{-55}$
- D. $\frac{8}{55}$

Q32. (Mensuration)

Find the area of the rectangular field in acres, whose sides are 80 m 5 dm and 110 m.

- A. 8,855 acres
- B. 5,500 acres
- C. 55.88 acres
- D. 88.55 acres

Q33. (Algebra)

Find the number of terms for the given algebraic expression:

$$0+98ab^2+108bc^2+80a^2c+0a+1b+2c+3ab+4bc+5ac-0$$

- A. 8
- B. 9
- C. 10
- D. 11

Q34. (Algebra)

Choose the greater number out of the following numbers given below:

$$9^2, 2^9, 6^2, 2^6$$

- A. 9^2
- B. 2^9
- C. $6^2,$
- D. 2^6

Q35. (Triangles)

Out of the given types of Triangles, what pair of triangles are always congruent?

- A. Scalene Triangles
- B. Equilateral Triangles
- C. Isosceles Triangles
- D. Right Triangles

Q36. (Triangles)

Which term is the most appropriate one for the below mentioned definition-

“It is made up of all such points that are not enclosed within the triangle.”

- A. Exterior of a triangle
- B. Exterior angle of a triangle
- C. Interior of a triangle
- D. Interior angle of a triangle

Q37. (Mensuration)

Find the circumference of the circle, whose diameter is 3.5 km.

- A. 77 km
- B. 11 km
- C. 7 km
- D. 21 km

Q38. (Number System-Exponents)

Express 729 in the exponential form.

- A. 3^7
- B. 4^6
- C. 2^7
- D. 3^6

Q39. (Fractions)

Choose the option that shows the correct decimal representation for the given fraction.

$$\frac{9}{200}$$

- A. 0.45
- B. 0.0045
- C. 0.045
- D. 4.5

Q40. (Integers)

Use BODMAS to simplify the given expression:

$$(-10) + 2 \times 5 \div 1 + 5$$

- A. 5
- B. 10
- C. -5
- D. -10

Section: Achiever Section

Q41. (Fractions)

Provide the missing number:

$$\frac{9}{20} \times (?) = \frac{-180}{800}$$

- A. $\frac{1}{2}$
- B. $-\frac{1}{2}$
- C. 0
- D. 1

Q42. (Number system)

The sum of two numbers is $-\frac{8}{50}$. If one of the numbers is $\frac{6}{10}$, find the other one.

- A. $\frac{22}{50}$
- B. $-\frac{22}{50}$
- C. $\frac{38}{50}$
- D. $-\frac{38}{50}$

Q43. (Mensuration)

The dimensions of a rectangular field are 300 m by 150 m. How long will it take for a boy to go three times round the field, if he walks with a speed of 1.8m/sec.

- A. 250 minutes
- B. 2.5 minutes
- C. 8 minutes
- D. $8\frac{2}{6}$ minutes

Q44. (Geometry- Symmetry)

Which of the following shapes have no line of symmetry?

- A. Rectangle
- B. Equilateral Triangle
- C. Scalene Triangle
- D. Rhombus

Q45. (Algebra)

Solve for 'x':

$$3x - \frac{9}{2} = -\left(\frac{8}{40}\right)$$

- A. $x = \frac{10}{43}$
- B. $x = \frac{43}{30}$
- C. $x = \frac{43}{10}$
- D. $x = \frac{47}{10}$
- E. $x = \frac{10}{47}$
- F.

Q46. (Mensuration)

A rectangle is made up of a piece of wire of length 32 m. It is re-bent to form a circle. Find the area of the circle so formed.

- A. 81.45 m^2
- B. 32 m^2
- C. 90.05 m^2
- D. Cannot be determined

Q47. (Number System-Exponents)

For $n = 0$, simplify the given expression:

$$\frac{(27 \times 3^{n+1}) - (9 \times 3^{n+1})}{(27 \times 3^{n+2}) - (3 \times 3^{n+2})}$$

- A. 0
- B. 1
- C. -1
- D. Value cannot be determined

Q48. (Triangles)

Angles of a triangle are in a ratio 3:2:1. Determine the smallest measure of the three angles.

- A. 45°
- B. 60°
- C. 90°
- D. 30°

Q49. (Geometry)

Two obtuse angles can be supplementary angles, if-

- A. Both the angles are Acute angles
- B. Both the angles are Obtuse angles
- C. Both the angles are Right angles
- D. Can never be supplementary angles

Q50. (Algebra)

Evaluate the given algebraic expression, for $a=1$, $b=2$, $c=3$, $x=-1$, $y=-2$, $z=-3$.

$$ax + by + cz + abc + xyz$$

- A. 0
- B. 10
- C. -14
- D. 14

Answer Sheet

Q1. B

Q2. A

Q3. C

Q4. A

Q5. D

Q6. B

Q7. C

Q8. A

Q9. D

Q10. C

Q11. D

Q12. D

Q13. B

Q14. A



Q15. C

Q16. D

Q17. B

Q18. A

Q19. A

Q20. D

Q21. B

Q22. C

Q23. D

Q24. C

Q25. A

Q26. B

Q27. A

Q28. C

Q29. C

Q30. B

Q31. B

Q32. D

Q33. A

Q34. B

Q35. D

Q36. A

Q37. B

Q38. D

Q39. C

Q40. A

Q41. B

Q42. D

Q43. D



Q44. C

Q45. B

Q46. A

Q47. B

Q48. D

Q49. D

Q50. C