

Sample Paper For Math Mastery Competition-2019



Instructions to participants

1. Do not open the booklet until you are told to do so.
2. Attempt ALL 65 questions.
3. Fill your answers neatly in the Bubble Sheet provided.
4. All figures are not drawn to scale.
5. Use of calculator is not allowed.
6. Questions in Section A carry 1 mark each, questions in Section B carry 2 marks each and questions in Section C carry 3marks each.

Section-A

Q1: Round off 19,73,19,371 to the nearest ten thousand:

- A. 19, 73, 00,000 B. 19,74,00,000
C. **19, 73,20,000** D. 19,73,19,000

Q2: Two numbers are in the ratio 7 : 9. If the sum of the numbers is 112, then the larger number is:

- A. 49 B. 72 C. **63** D. 42

Q3: If selling price is doubled, the profit triples. Find the profit percent.

- A. $66\frac{2}{3}$ B. **100** C. $105\frac{1}{3}$ D.120

Q 4: Individual Objects in a set are called:

- A. **element** B. set C. list D. None of these

Q5: $X \cup Y = \{ 1,2,3,4,5,6,7,8,9,10 \}$ then the set X and Y can be:

- A. $X = \{1,2,3,4,5\}$ B. $Y = \{6,7,8,9,10\}$

Rough Work

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C. $X = \{2, 4, 6, 8, 10\}$

D. both A&B

Q6: The least common multiple of two numbers is 225 and the highest common factor is 5. If one of the numbers is 25 what will be the other number?

i. 75

ii. 65

iii. 45

iv. 15

A. iii is true.

B. i,ii are true.

C. ii,iii are true.

D. i,iii are true.

Q7: Evaluate 28% of 450 + 45% of 280:

i. 232

ii. 242

iii. 252

iv. 262

A. i, is false.

B. i and ii are false.

C. i,ii and iv are false.

D. ii, iii and iv are false.

Q8: Which of the given is a rational number:

A. $\frac{2}{3}$

B. 0.3333

C. $\sqrt{3}$

D. both A&B

Q9: 16 equivalent to binary system is equal to:

A. 10000

B. 100000

C. 1000

D. 1

Q10: $2^3 \times 2^{-2} =$

A. 2^5

B. 16

C. $\frac{1}{2}$

D. 2

Q11:

Q39: What is the square root of 12?

A. $3\sqrt{2}$

B. $2\sqrt{3}$

C. 6

D. 4

Q40: Which one of the given is the associative property of integers:

A. $(2+3)+4=2+(3+4)$

B. $(2 \times 3) \times 4 = 2 \times (3 \times 4)$

C. $2(3+4)=2 \times 3+2 \times 4$

D. Both A & B

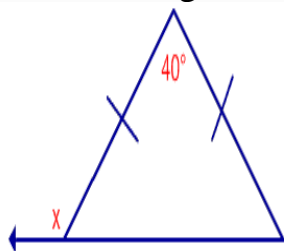
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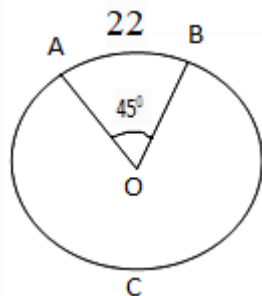
SECTION-B

Q41: What must be the value of angle x in the figure below.



- A. 110° B. 105°
C. 100° D. 95°

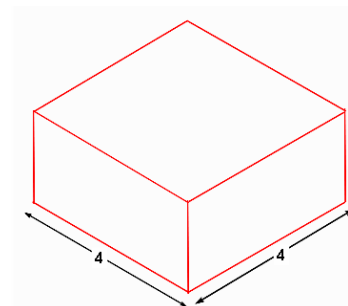
Q42: If the length of the shorter arc AB is 22cm and C is the centre of the circle then the circumference of the circle is:



- A. 990 cm B. 67 cm
C. 176 cm D. **88 cm**

Q43: Calculate the volume of the cuboid.

- A. $10 (\text{unit})^3$ B. $24 (\text{unit})^3$
C. **$32 (\text{unit})^3$** D. $48(\text{unit})^3$



Q44: Which quadrilateral have diagonals that are perpendicular to each other?

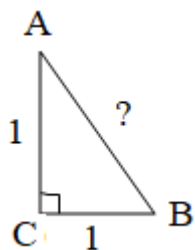
- A. Parallelogram B. Rectangle C. Square D. Rhombus

Q45: Find the length of the side AB in the adjacent triangle ABC.

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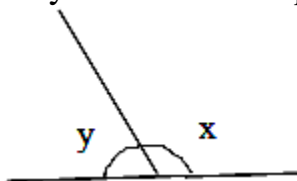


Rough Work



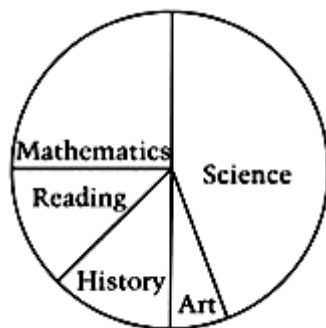
- A. 1 B. 2 C. $\sqrt{2}$ D. $\sqrt{3}$

Q46: What value of the sum $x+y$ make them supplementary angle .



- A. $x+y = 90^\circ$ **B. $x+y = 180^\circ$** C. $x+y=270$ D. $x+y=360^\circ$

Q47: The pie chart below shows the portion of time Ali spent on homework in each subject last week. If Ali spent 2 hours on mathematics, about how many hours did Ali spent on homework altogether?



- A. 4 **B. 8** C. 12 D. 16

Q53: The perimeter of a rectangle is 24cm. what its area if its length is twice than its width.

- A. 28cm^2 **B. 32cm^2** C. 16cm^2 D. 36cm^2

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Q54: Median of 7, 6, 4, 8, 2, 5, 11 is:

- A. 6 B. 12 C. 11 D. 4

Q 55: In the interval 35-45, 45 is called:

- A. **Upper limit** B. Lower limit
C. Range D. Frequency

SECTION-C

Q56: Zara had 21 marbles. Her friend gave her some more. She then had 35 marbles.

Write an expression that shows how many marbles she had.

- A. $21 + 35 = 56$ **B. $21 + x = 35$** C. $x + 35 = 21$ D. $35 - x = 21$

Q57: Simplify $(8u^3 + 2u^2 + 7) + (3u^3 - 7u + 8)$:

- A. $5u^3 - 7u^2 + 2u - 15$ **B. $11u^3 + 2u^2 - 7u + 15$**
C. $15 - 7u + 2u^2 + 11u^3$ D. $5u^3 + 2u^2 - 7u + 15$

Q58: $a^2 - b^2$ is a product of:

- A. **$(a + b)(a - b)$** B. $(a + b)(a + b)$ C. $(a - b)(a - b)$ D. None of these

Q59: Solve the system simultaneous equations below.

$$x + 5y = -13 \quad \text{and} \quad 2x - y = 7$$

Which of the following is the value of y?

- A. $y = -\frac{11}{5}$ B. $y = -2$ C. $y = -\frac{7}{3}$ **D. $y = -3$**

Q60:

Q61:

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Q65: $y = \frac{7}{3}x + 5$.

If $x = -9$ then what is y ?

A. 2.333

B. -21

C. **-16**

D. -66