



American
Mathematics Olympiad

PRIMARY 2 (GRADE 2) MOCK TEST PAPER SET 1

NAME: _____

Index Number:

SCHOOL: _____

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INSTRUCTIONS:

1. Please **DO NOT OPEN** the contest booklet until the Proctor has given permission to start
2. TIME: **1 hour 30 minutes**.
3. There are 25 questions with 100 total points:
Section A: Questions 1 to 15 score 3 points each, no points are deducted for an unanswered or wrong answer.
Section B: Questions 16 to 20 score 5 points each, no points are deducted for an unanswered or wrong answer.
Section C: Questions 21 to 25 score 6 points each, no points are deducted for an unanswered or wrong answer.
4. Shade your answers neatly using a **2B lead pencil** in the Answer Entry Sheet.
5. PROCTORING: No one may help any student in any way during the contest.
6. No electronic devices capable of storing and displaying visual information are allowed during the course of the exam. Strictly **No Calculators** are allowed.
7. All students must fill and shade their **Name, School and Index Number** in the Answer Entry Sheet and Contest booklet.
8. MINIMUM TIME: Students must stay in the exam hall for at least 1 hour.
9. A student must show detailed working and transfer answers to the Answer Entry Sheet.
10. **No exam papers and written notes can be taken out by any contestant.**



SIU SOUTHERN ILLINOIS UNIVERSITY
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ROUGH WORKING

Section A: Multiple Choice Questions

3 points each

Question 1

Find the sum:

$$4 + 16 + 24 + 36 + 44 + 56$$

- A. 160
- B. 170
- C. 180
- D. 190
- E. 200

Question 2

The sum obtained after we add double of 25 to one-third of 21 is subtracted from 100. What is the final number in the end?

- A. 60
- B. 29
- ☒ C. 43
- D. 57
- E. 71

$$\begin{aligned} 50 + 7 &= 57 \\ 100 - 57 &= 43 \end{aligned}$$

Question 3

Suzy has five kids. Amy is older than Beth but younger than Carla. David is older than Erwin but younger than Beth. Who is the eldest child?

- A. Amy
- B. Beth
- ☒ C. Carla
- D. David
- E. Erwin

Carla -
Carla, Amy, Beth, David, Erwin

Questions 4

Sarah's birthday falls on 6th September each year. Today is 27th July and ~~is~~ a Sunday. What day will be Sarah's birthday this year?

- A. Thursday
- ☒ B. Saturday
- C. Sunday
- D. Monday
- E. Friday

Question 5

On the number table of 1-100, we finally reached 50 after we added 72 and subtracted 36 from the original number. What is the original number?

- A. 86
- ☒ B. 14
- C. 48
- D. 50
- E. 84

$$\begin{array}{r} \underline{\quad\quad} + 72 - 36 = 50 \\ \underline{\quad\quad} + 36 = 50 \\ 14 + 36 = 50 \\ \hline \downarrow \end{array}$$

Question 6

How many natural numbers are there which are less than 300 and their digits add up to 5?

- A. 18
- B. 10
- C. 12
- ☒ D. 15
- E. 14

51		<u>5, 0, 0</u>
412	5, 0	4, 1, 0
323	4, 1	3, 1, 1
234	3, 2	<u>3, 2, 0</u>
145	2, 3	<u>2, 2, 1</u>
~~506~~		
140		
1048	2031	
1139	2302	
1310	12232215	
	2124	

Question 7

Roy walks 10 m to his school and then continues the remaining three-fourths of the whole journey by bus. How far is Roy's school from his house? _____

- A. 134 m
- B. 100 m
- C. ~~30 m~~
- D. 40 m
- E. 400 m

Handwritten notes for Question 7: A vertical line with a horizontal tick at the top, followed by four slanted lines, and the number 400.

Question 8

$ABCD$ is a square with an area of 72 m^2 . It is further divided into 9 smaller squares with equal areas. Find the area of 5 such smaller squares, in m^2 . _____

- A. ~~36~~
- B. 40
- C. 45
- D. 50
- E. 52

Handwritten notes for Question 8: $72 \div 9 = 8$ and $8 \times 5 = 40$.

Question 9

A 1-liter bottle was filled up using a 150-ml and a 50-ml jug. Both jugs were poured thrice into the empty 1-liter bottle. How much more liquid can be poured into the bottle to fill it to the brim?

- A. 600 ml
- B. 650 ml
- C. 450 ml
- ☒ D. 400 ml
- E. 500 ml

$$150 \text{ ml} + 50 \text{ ml} = 200 \text{ ml}$$
$$200 \times 3 = 600$$

$$1,000 \text{ ml}$$
$$1000 - 600 = 400$$

Question 10

If all alphabets are represented by a number starting with $A = 1$, $B = 2$, $C = 3$, and so on, find the sum of the digits represented by the word SMART.

-(Note: DOG is written as 4157)

- A. -20
- B. 24
- ☒ C. 26
- D. 28
- E. 30

$$\begin{array}{l} M - 13 \\ R - 18 \\ S - 19 \\ T - 20 \end{array}$$

$$\begin{array}{l} A = 1 \\ B = 2 \\ C = 3 \\ J = 10 \end{array}$$

$$1 + 9 + 13 + 18 + 20$$

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Question 11

How many times do the hour and minute hand cross an even number on the clock from 1 a.m. to 1 p.m.?

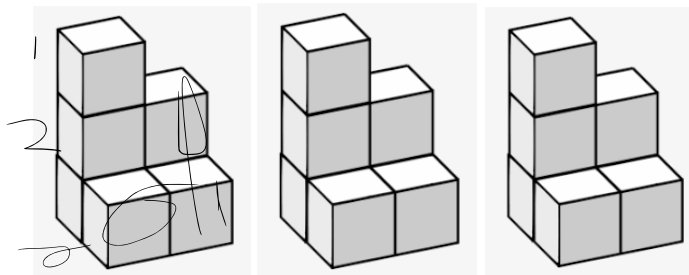


- A. ~~70~~
- B. ~~72~~
- C. 78
- D. 76
- E. 80

$$\begin{array}{r} 6 \times 12 = 72 \\ 72 \\ + 6 \\ \hline 78 \end{array}$$

Question 12

Count the number of blocks in the following picture.



- A. ~~15~~
- B. 18
- C. 20
- D. 21
- E. 24

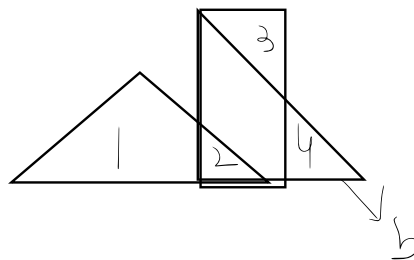
Question 13

A fan has three blades. How many blades will there be in 150 such fans?

- A. ~~450~~
- B. 150
- C. 500
- D. 50
- E. 45

Question 14

Count the number of triangles in the picture.



- ☒ A. 5
- B. 6
- C. 4
- D. 3
- E. 9

Question 15

What number has 2 hundreds, 5 more tens than 20 and 1 less than 7?

- A. 251
- B. 272
- ☒ C. 276
- D. 271
- E. 254

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Section B: 5 Open – Ended Questions

5 points each

Question 16

Harry scored 3 more marks than Alwin. Sophia scored the same as Harry. The sum of their scores was 51. How many marks did Alwin score?

$$\begin{array}{l}
 15 \\
 \\
 \frac{45}{3} = A \\
 15 = A \\
 \\
 H = A + 3 \\
 S = H \\
 \\
 \cancel{H} + \cancel{H} + S + A = 51 \\
 \underbrace{A + 3 + A + 3 + A}_{3A + 6} = 51 \\
 3A + 6 = 51 \\
 3A = 45 \\
 A = 15
 \end{array}$$

Question 17

Alice picked two cards from deck such that the sum of the numbers on the two cards was 15. Find how many combinations she may have. (In the deck of cards, A = 1, J = 11, Q = 12, K = 13 while the remaining cards are numbers 2 to 10)

$$\begin{array}{l}
 6 \\
 \\
 1 - 13 \\
 2 - 13 \\
 3 - 12 \\
 4 - 11 \\
 5 - 10 \\
 6 - 9 \\
 7 - 8
 \end{array}$$

Question 18

Five students entered a contest where they had to guess the number of candies in a box. Alan guessed 25 candies while Beth guessed 30. Charles guessed 27 and David guessed 35. Roma was declared as the winner. One of the students guessed 4 more than Roma's number while another student guessed 4 less than hers. What was the number guessed by Roma?

27 31 35

Question 19

Ayer and Kumar tossed a coin. Ayer wins if it is a head while Kumar wins if it is a tail. The winner gets 3 marbles from the loser. Both had 20 marbles each in the beginning. They played 10 rounds and Ayer won 4 rounds. What is the total number of marbles Kumar had in the end?

2 more
6 rounds - Kumar
4 rounds - Ayer

$$20 + 2 \times 3 = 26$$

Question 20

A	B	C	D	E
1	2	3	4	5

The place cards shown are folded along the dotted line so that only a number or letter is visible. Chrissy enters the room and sees all five place cards, with at least 2 number cards being shown. The sum of numbers that she sees is less than 8. How many different sets of numbers are there?

10

1, 2 2, 3 1, 2, 3
 1, 3 2, 4 1, 2, 4
 1, 4 2, 5
 1, 5 3, 4

Question 21

If the digits of a two-digit number are reversed to form a new number, the difference between the two numbers is 45. How many different such pairs are there?

61, 16 1
 72, 27 2
 38, 83 3
 94, 49 4
 50, 05 5

5

Question 22

Harry wrote 1, 2, 3, 11, 22, 33, 111, 222, 333, ... until he got 17 numbers. What is the sum of the digits of the last number he wrote?

12

Question 23

A jar of 30 chocolates is shared among Ann, Alice, and Alisha. Alice takes more than anyone else. What is the least number of chocolates she could have taken?

11

Question 24

Few kids were playing cricket. Each of them carried 4 balls. While playing, 17 balls were hit outside the ground and lost. In the end, they were left with a total of 55 balls. How many kids were playing together?

18

$$\begin{array}{r} 55 \\ + 17 \\ \hline 72 \end{array}$$

$$\begin{array}{r} 18 \\ 4 \overline{) 72} \\ \underline{72} \\ 0 \end{array}$$

Question 25

Patrick started jumping every day. He jumped 10 times on Day 1. He jumped 8 more times than Day 1 on Day 2. He jumped 8 more times than Day 2 on Day 3. He continued to jump 8 more times than the previous day every day. Which day will be the first day when he would have jumped at least 100 times in one day?

1 - 10	6 - 50
2 - 18	11 - 90
3 - 26	12 - 98
4 - 34	13 - 106
5 - 42	