mathemania
national math puzzle contest

Primary Schools Level

Sample Questions

mathemania
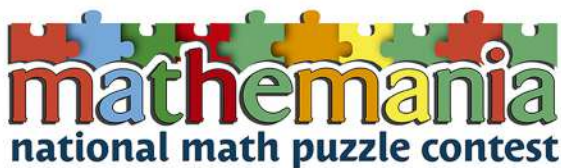## national math puzzle contest

FOREWORD

NATIONAL MATHEMANIA PUZZLE CONTEST

Dear Mathemania Puzzle Contest 2017 participants,

Galaxy International School Uganda and Horizon International School Uganda are delighted to welcome you to Mathemania Puzzle Contest 2017. It is with excitement and great anticipation that we await the contest to serve more students every year with the aim of helping them develop some fundamental skills needed for 21st century education.

The puzzles in Mathemania Puzzle Contest are designed around 5 basic skills that are essential for students' success in different subject areas such as mathematics, sciences and technology. The skills include arithmetic, visual/spatial, counting, pattern finding, and logical reasoning.

You will find puzzles from the past Mathemania Puzzle contests in this booklet. We

hope that this booklet will help you to understand Mathemania puzzles and practice

techniques to solve them. Solving the puzzles without looking at the solutions will help you get many different skills and be ready for solving the new puzzles.

We are looking forward to hosting this grand event in 2017.

Let's get puzzled then.

Some technical details about the Puzzle Contest are as follows:

1. Levels

Participants are placed at three different levels in the contest according to their class.

Primary Category Local Schools P1 – P7, International Schools Y1 – Y7

Secondary Category Local Schools S1 – S6, International Schools Y8 – Y13

2. Skills

The puzzles in the contest are designed around 5 skills:

• Arithmetic, where understanding of numerical skills are assessed.

• Visual/Spatial, where the visual skills are required to solve the puzzles.

• Counting, where students are required to use a systematic way to count.

• Pattern, where discovery of different level patterns is expected.

• Logical Reasoning, where students use their logical and reasoning skills to tackle the puzzles.

1 What is the next number in the following pattern?

3-9-27-81-?
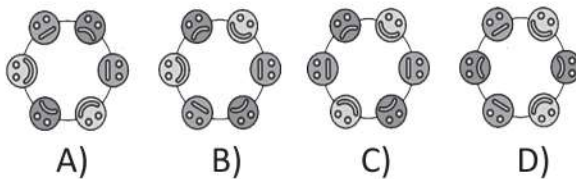
A) 162
B) 100
C) 243
D) 324

[3]

2 Which of the following is different than the others?

A) 1919
B) 9009
C) 1991
D) 9119

[3]

3 Which of the following is different than the others?

A)   B)   C)   D)

[4]

4 PART=1023

2013=?

A) TRAP
B) RAPT
C) ARPT
D) RATP

[3]

5

2	5	11	23
7	16	34	70
22	49	133	211
67	148	400	?

A)   633
B)   423
C)   634
D)   801

[5]

6

Which of the following is different than the given figure?

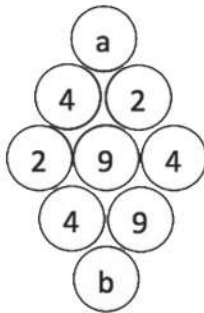A)   B)   C)   D)

[3]

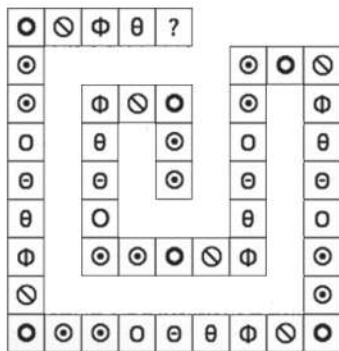**7**   The following numbers are written according to a system. Find the value of a+b.

A)   12
B)   13
C)   15
D)   19

[3]

8   Which symbol must be written instead of the question mark?
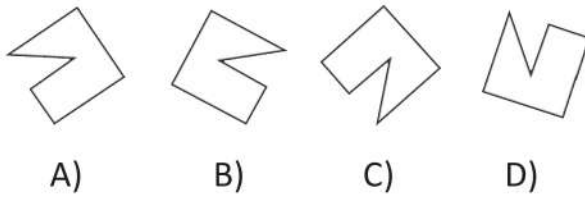
[4]

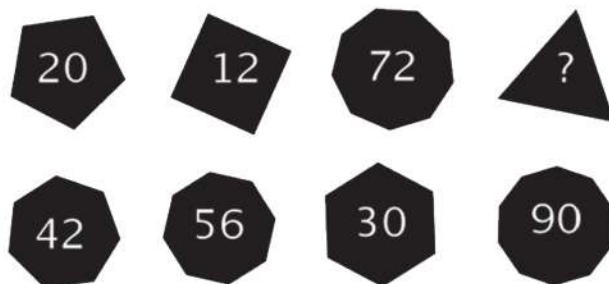A)   ○
B)   Φ
C)   ⊖
D)   ○

9 Which of the following is different than the others? [4]

A)   B)   C)   D)

10 What should replace the question mark?

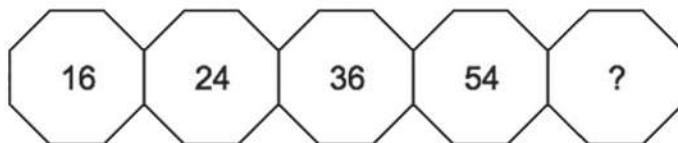
A) 6   B) 9   C) 18   D) 24   [4]

11 What should be written instead of the **question mark** in the following pattern?
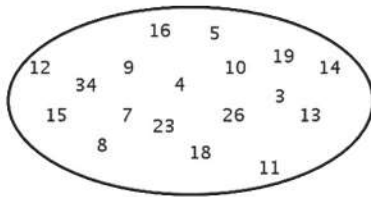

A) 72   B) 78   C) 81   D) 96

[4]

12 Using the numbers given below, calculate the difference between the sum of the two highest even numbers and the product of the two lowest odd numbers.
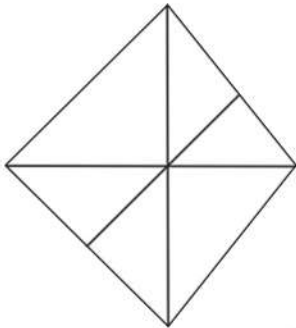
16 5
12 9 19 14
34 4
10
15 7 26 3 13
23
8 18
11

A) 58
B) 45
C) 16
D) 0

[5]

[4]

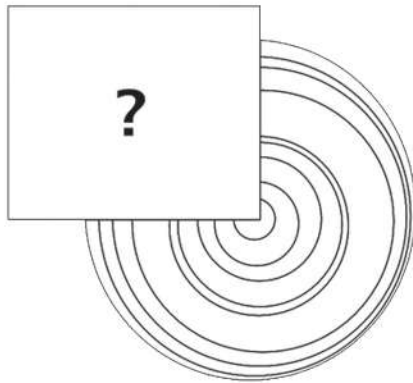**13** How many triangles are there in the following figure?

A) 16
B) 12
C) 10
D) 14

[4]

14

?

A)   B)   C)   D)

4

What should replace the question mark?

[4]

$19 \rightarrow 61$

$68 \rightarrow 89$

$98 \rightarrow ?$
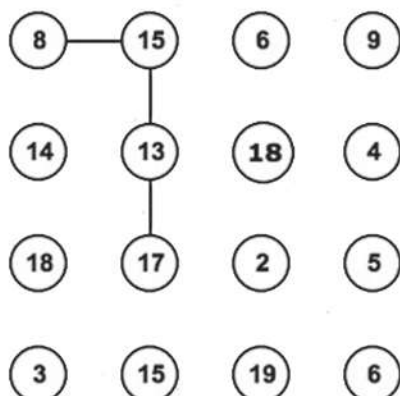
A)   112
B)   69
C)   86
D)   116

16

Anna's age was a square number last year. Next year her age will be a cube number. How old is she?

A)   5
B)   9
C)   26
D)   65

[3]

17

Join any four numbers and find their total. You can join the numbers going up, down or sideways, but not diagonal. There is an example below which adds up to 53.

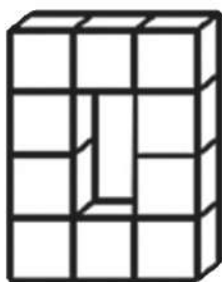A)   64
B)   70
C)   68
D)   69

[5]

18 Ten cubes are attached together as shown in the figure. Then Jay paints the entire shape. How many of the cubes are painted on exactly 4 faces?

[5]

A)   10
B)   8
C)   6
D)   5

19

| 24 | ? | 12 | 6 | 2 | 2 | 1 |

[3]

A)   18
B)   16
C)   12
D)   2

20 Before a football game between two teams starts, each team player shakes hands with all the opponent team players and the referees. There are 11 players in each football team and there are 3 referees for the game in the pre-match ceremony.

Therefore there will be _____ handshakes in total. Which number should be written in the blank?
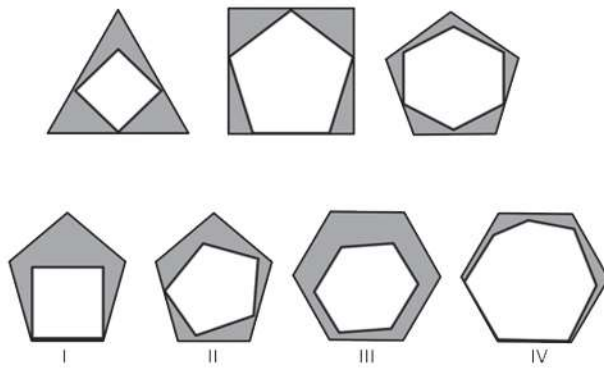
A)   124
B)   154
C)   187
D)   242

[5]

21 If the given pattern continues, what will be the next figure?

[4]

I   II   III   IV

A) IV   B) II   C) III   D) I

22 Nino has 12 chocolates and he wants to divide them into 3 piles so that each pile contains a different number of chocolates.
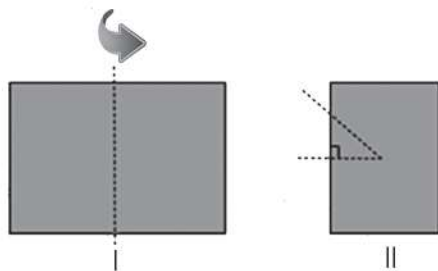In how many ways can this be done?
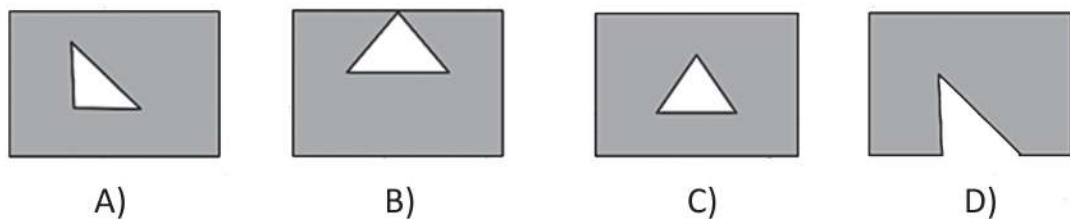Note: 5,4,3 pile is the same as 5,3,4 pile.

[4]

A)   3
B)   9
C)   8
D)   7

23

I   II

[4]

A rectangular paper is folded as shown in figure I. Then it is cut as shown in figure II. Which of the following figures is obtained in the end?

A)   B)   C)   D)

24

Which of the following fits the figure above?

[5]

A)   B)   C)   D)

25 Mauricio counts from 1 to 200. Believing that '7' is not a lucky number for him. He skips all the multiples of seven and all the numbers that contain digit 7. In this situation, how many numbers does he skip?

[5]

A)   72
B)   61
C)   55
D)   35

GALAXY
INTERNATIONAL
SCHOOL UGANDA

Educating to inspire global excellence

horizon
INTERNATIONAL SCHOOL
beyond your horizons...

ANNUAL SPELLING BEE CONTEST

JUNIOR SECTION
Primary Schools CaMondaytego
11th June 2017,
SENIOR SECTION
Secondary Schools Category
12th June 2017, Tuesday

Written Section   09:00
Oral Section   13:00

AWARDS
for each category

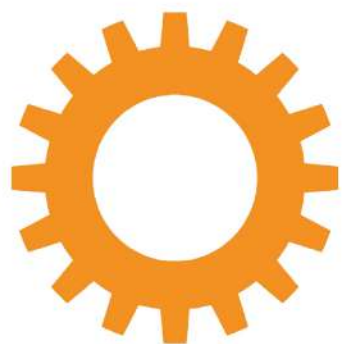1st Place   Gold Medal   400 000 ush   Certificate
2nd Place   Silver Medal   250 000 ush   Certificate
3rd Place   Bronze Medal   150 000 ush   Certificate

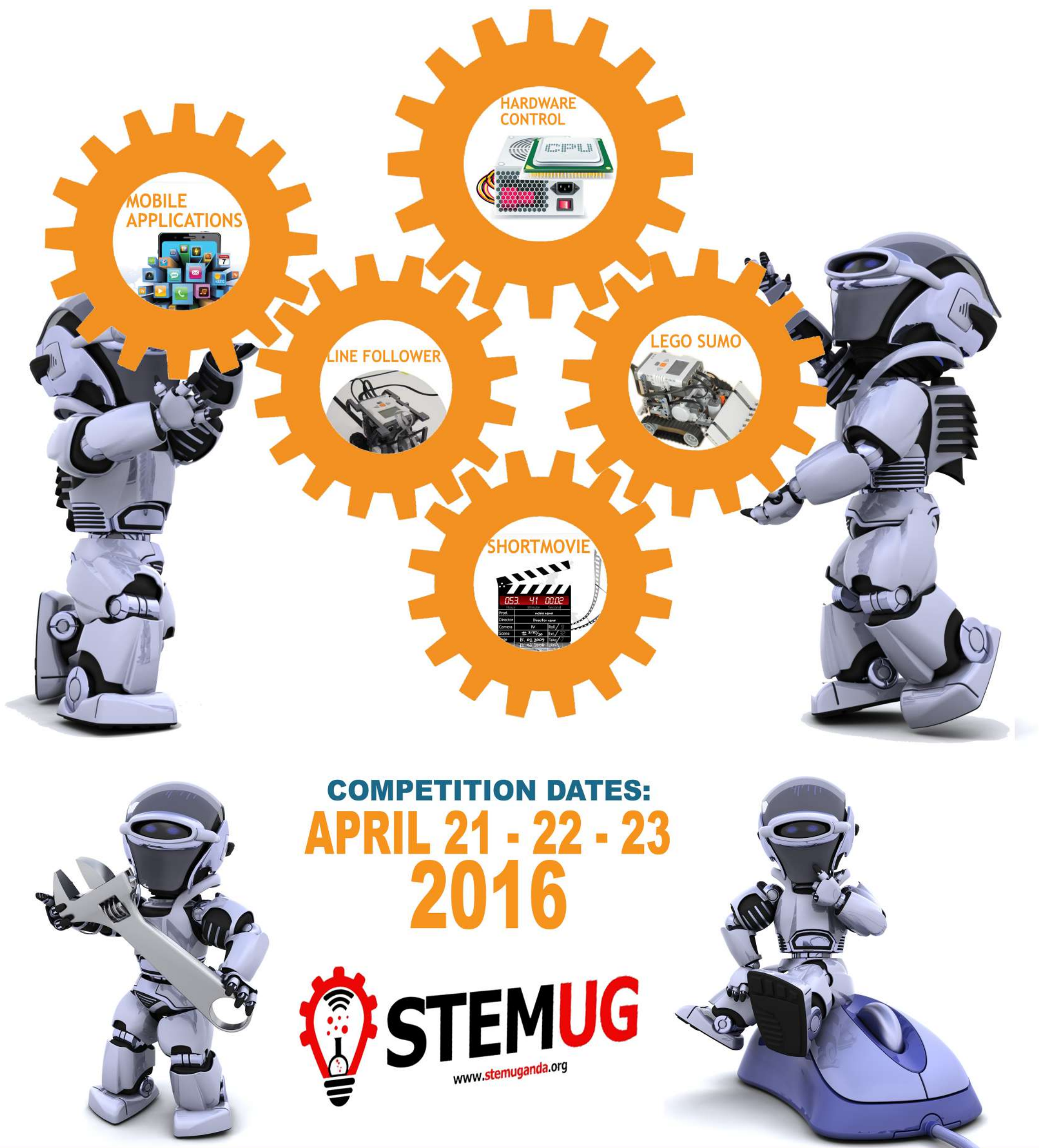Top 15 students are going to be awarded with certificates and special awards.

SPELLING BEE

GISUTECH

INTERNATIONAL ROBOTICS AND TECHNOLOGY COMPETITION

MOBILE APPLICATIONS

HARDWARE CONTROL

LINE FOLLOWER

LEGO SUMO

SHORTMOVIE

COMPETITION DATES:
APRIL 21 - 22 - 23
2016

STEMUG
www.stemuganda.org