## GENIUS HOUR SHOW TIME

Math Kangaroo Problems created by the Navigating Math Kangaroo Class 2021/2022 Grades 3 and 4

## Problem 1

## Created by Anonymous (Mr. Chen's Class)

Antara has a certain number of katana swords. She trades 3 swords for 10 swords. She now has twice as many swords as before the trade. How many swords does she have now?
(A) 12
(B) 13
(C) 14
(D) 15
(E) 16

## Problem 2

## Created by Anonymous (Mr. Kohli's Class)

On a certain farm, a duck quacks every 3 minutes, a cow moos every 7 minutes, and a horse neighs every 12 minutes. At noon, the animals all sound off together. In how many minutes will all three animals sound off together
 again?
(A) 63 min
(B) 72 min
(C) 77 min
(D) 84 min
(E) 96 min

## Problem 3

## Created by Dhanya (Dr. Wei's Class)

Tortoise and Rabbit are running a race. Rabbit starts the race at the starting point and tortoise starts 100 meters ahead of the rabbit. Tortoise runs at a speed of 5 meters per second and rabbit runs at a speed of 10 meters per second. How far from the starting point do they meet?
(A) 100 m
(B) 150 m
(C) 200 m
(D) 250 m
(E) 300 m


## Problem 4

## Created by Arnav (Mr. Chen's Class)

Tyler made an 8-by-8 square cookie with his friends and cut it into triangles as shown on the picture. He then gave away the largest triangle to his mom and fed 1 of the smallest triangles to a pigeon. What is the sum of the areas of the remaining triangles?

(A) 16
(B) 20
(C) 24
(D) 28
(E) 32

## Problem 5

## Created by Mayumi (Dr. Sagi's Class)

In 2021, my mother made hot chocolate for 320 people for Christmas. Each person gets exactly 1 cup. Every following year, there are 2 times as many people as the year before for whom she makes hot chocolate. Each cup has 6 marshmallows. How many marshmallows does she use in 2024?
(A) 1,920
(B) 15,360
(C) 18,200
(D) 3,206
(E) 24,288


## Problem 6

## Created by Siyona (Mrs. Charif's Class)

Christina writes the number 9650720 on a piece of paper. Then, she cuts the number into three parts so that she gets three numbers. What is the smallest sum she can get by adding these 3 numbers?

(A) 623
(B) 974
(C) 1537
(D) 290
(E) 173

## Problem 7

## Created by Joseph (Mrs. Charif's Class)

Alex has 19 blue marbles and Jimmy has 15 blue marbles. Four blue marbles can be traded for two green marbles. Three green marbles can be traded for two yellow marbles. If Alex and Jimmy combine their marbles, what is the greatest number of yellow marbles they can trade their marbles for?
(A) 34
(B) 10
(C) 16
(D) 102
(E) 5


## Problem 8

## Created by Lotus (Dr. Sagi's Class)

Mary drives coconuts to Washington. Her truck can hold 800 pounds. Mary weighs 163 pounds and the coconuts each weigh 3 pounds. Each 10 coconuts share a crate that weighs 2 pounds, and each coconut must be in a crate. How many times does she have to drive to Washington in order to deliver 1000 coconuts?
(A) 3
(B) 4
(C) 6
(D) 10
(E) 30

## Problem 9

## Created by Diane (Mr. Chen's Class)

There were 24 red marbles, 19 green marbles, and $x$ number of blue marbles. The total number of marbles was divisible by 2 and 13, and it was bigger than 47 and smaller than 78. What was the number of blue marbles?
(A) 9
(B) 19
(C) 13
(D) 7
(E) 35

## Problem 10

## Created by Rishaan (Dr. Sagi's Class)

Joe has some cupcakes. Audrey has twice as many cupcakes as Joe. Steve has 3 times as many cupcakes than Audrey. Alex has half the number of cupcakes that Steve has. Ben has the same number of cupcakes as Joe and Audrey combined. There is a total of 15 cupcakes. What is the difference in the number of cupcakes between the person who has the most and the person who has the fewest?
(A) 2
(B) 3
(C) 4
(D) 5
(E) 6


## Problem 11

## Created by Krrish (Dr. Wei's Class)

After Round 1 of gymnastics vault, Simone had 500 points, Jordan had 3 times as many points as Simone, and Suni had 140 points less than Jordan. In Round 2, Simone got 700 points and Jordan couldn't score any points. The person who scores the greatest number of points wins the championship. What is the least number of points Suni needs to score in round 2 to win the overall championship?
(A) 140
(B) 141
(C) 160
(D) 133
(E) 151

## Problem 12

## Created by Angela (Mrs. Charif's Class)

Supergirl could lift a 1 kg dumbbell when she was 1 year old. On her 2nd birthday, she could lift a 3 kg dumbbell, on the 3rd birthday a 9 kg dumbbell, and then $27 \mathrm{~kg}, 81 \mathrm{~kg}$, and so on. On which birthday can she lift a 100-ton dumbbell? (1 ton = 1000 kg )

(A) 4
(B) 6
(C) 8
(D) 10
(E) 12

## Problem 13

## Created by Reyansh (Mr. Chen's Class)

In a garden, there are two types of magic bushes. There can be 11 cherries and 6 strawberries on one type and 9 cherries and 8 strawberries on other type. There is a total of 51 cherries in the garden. How many strawberries are there in the garden?

(A) 51
(B) 6
(C) 14
(D) 34
(E) 172

## Problem 14

## Created by Akshay (Dr. Wei's Class)

60 teams competed in a soccer tournament with 3 rounds. Half of the teams were eliminated in the first round. 2/3 of the remaining teams were eliminated in the second round, and $4 / 5$ of the remaining teams were eliminated in the final round. How many teams got prizes at the end?
(A) 4
(B) 10
(C) 1
(D) 2
(E) 16


## Problem 15

## Created by Noah (HS student - Dr. Wei's class assistant)

There is a small library with 1 bookshelf. That bookshelf has 3 books: Math, Science, and English. Bob, Charlie, and Emma all decide to go to the same library on the same day. Bob arrives at 2:00 PM. He randomly chooses a book and sits down to read for 30 minutes. After he is done reading, he returns the book to the bookshelf. Charlie arrives at 2:15 PM and he chooses a random book from the bookshelf and reads for 60 minutes. After he is done, he also returns the book to the bookshelf. Emma arrives at 3:00 PM and she randomly chooses a book on the bookshelf, sits down, reads it for 15 minutes, and then returns it. What is the probability that at least 2 people read the same book?
(A) $1 / 6$
(B) $1 / 5$
(C) $1 / 4$
(D) $1 / 3$
(E) $1 / 2$


## Problem 16

Created by Artem (HS student - Mrs. Charif's class assistant)

Three cats - Luna, Milo, and Oliver - live in three different houses. There are threestory houses and one-story houses. Two of the houses have square windows and one has oval windows. Three-story and onestory houses have different window shapes. Luna does not live in a one-story house. Milo and Oliver live in houses with a different number of floors. Oliver lives in a one-story house with oval windows. What are the windows in Milo's house, and how many floors are in his house?

(A) square windows, three floors
(B) oval windows, three floors
(C) square windows, one floor
(D) oval windows, one floor
(E) This situation is not possible.

## Answer Key

1. (C)
2. (A)
3. (D)
4. (C)
5. (D)
6. (B)
7. (A)
8. (D)
9. (B)
10. (C)
11. (B)
12. (C)
13. (D)
14. (D)
15. (E)
16. (A)
