Name: _____

Round 2: Multiple Choice Questions

There are 15 problems in this round. Make sure to write your answers (A, B, C, D, or E) on the answer sheet. Correct answers are worth 7 points each. Have fun!!! ☺

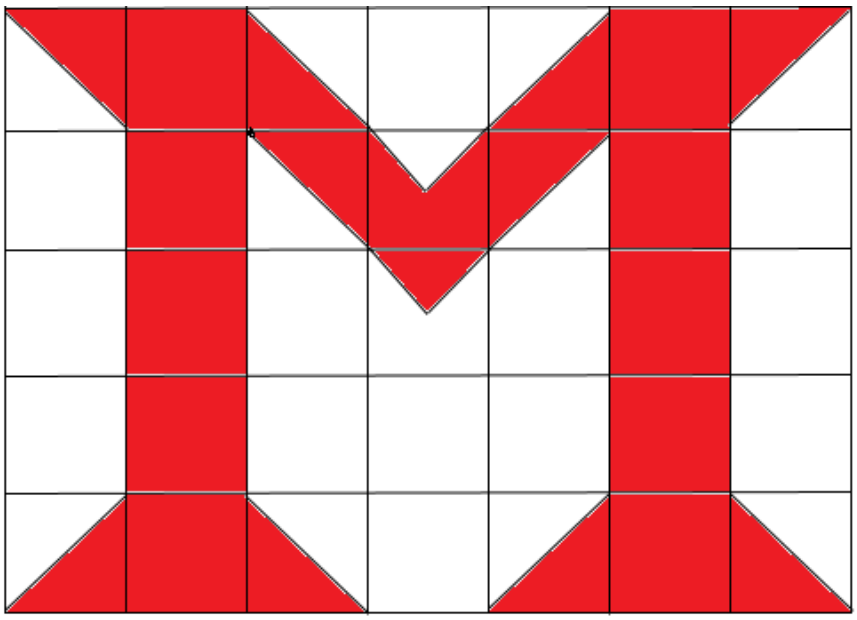
Problem 1

Amy bought a bag of apples at the grocery store. She gave half of the apples to Rayan. Then she gave Patricia 3 apples, keeping 4 apples for herself. How many apples did Amy buy?

A. 3
B. 4
C. 7
D. 11
E. 14

Problem 2

If each side of each square in the grid is 2, then what is the area of the shaded region?



A. 16
B. 32
C. 56
D. 64
E. 72

Problem 3

What is the least number of people you could have in a group and still be sure that at least 8 of them have birthdays in the same month?

A. 86
B. 87
C. 82
D. 85
E. 88

Problem 4

The digits 1, 2, 3, 4, and 9 are each used once to form the smallest possible **even** five-digit number.

A. 1
B. 2
C. 3
D. 4
E. 9

Problem 5

If you start baking cookies at 10:28 AM that were frozen at -460°F, and you estimate that it would take 500 minutes to thaw to 0°F, 89 seconds to thaw to room temperature in the microwave, and 25 minutes to bake, what is the closest time at which you can expect some (not very edible) cookies?

A. 6:48 PM
B. 6:49 PM
C. 7:00 PM
D. 7:14 PM
E. 7:15 PM

Problem 6

What is the largest positive integer less than 75 that has exactly 8 distinct factors?

A. 70
B. 71
C. 72
D. 67
E. 73

Problem 7

Simeon was reading a novel to his imaginary friend. He read 17 pages a day; after 12 days, he had read ⅓ of the book left to read. How many pages are in the book?

A. 102
B. 204
C. 306
D. 408
E. 510

Problem 8

Pretend that you are already in middle school and want at least a 90% average so your parents will reward you with a new phone. You know for certain that three of your seven grades are 85, 90, and 92. What is the lowest sum of the remaining four grades that will ensure a 90% average?

A. 280
B. 363
C. 423
D. 630
E. 723

Problem 9

The measures of the three angles of a triangle form an arithmetic sequence. If the smallest angle measures 30 degrees, what is the number of degrees in measure of the largest angle?

A. 90
B. 91
C. 92
D. 87
E. 93

Problem 10

For what value of x does

$$7^9 = \left(\frac{1}{343}\right)^x \quad ?$$

A. -2
B. -1
C. -6
D. 0
E. -3

Problem 11

The residents of Nogginbumpin greet each other by bumping heads. At a gathering, a total of 45 bumps were exchanged. If each person bumped heads exactly once with every person there, how many residents attended?

A. 9
B. 8
C. 10
D. 13
E. 7

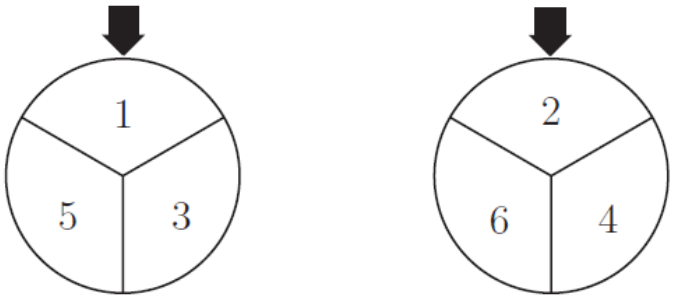
Problem 12

Given that $6x + 12y = 35$ and $12x + 6y = 91$, what is the value of $x + y$?

A. 6
B. 7
C. 5
D. 10
E. 4

Problem 13

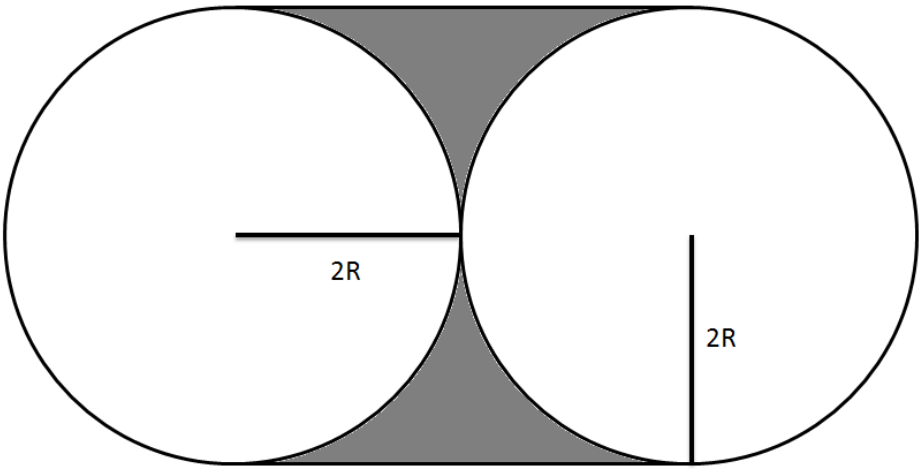
The two spinners shown are spun once and each lands on one of the numbered regions. What is the probability that the sum of the numbers in the two regions is prime?



A. 1/2
B. 2/3
C. 3/4
D. 7/9
E. 5/6

Problem 14

If the radii of the two circles below are each 2R, then what is the area of the shaded region below?



A. $4R^2$
B. $4R^2(1-\pi)$
C. $16R^2$
D. $4R^2(4-\pi)$
E. $2\pi R^2$

Problem 15

Shaina wrote 6 different numbers, one on each side of 3 cards, and laid the cards on a table, as shown. The sums of the two numbers on each of the three cards are equal. The three numbers on the hidden sides are prime numbers. What is the average of the hidden prime numbers?

A. 13
B. 14
C. 15
D. 16
E. 17