

**2024 Penny Sikes  
Math Tournament  
Ciphering Questions**

## Round 1 - Practice Question

How many two digit numbers have digits whose sum is 8?

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**School Code**

**Answer**

## Round 1 - Question 1

John draws a rectangle with side lengths 7 and 6. What is the numerical difference between the area and perimeter of John's rectangle?

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**School Code**



**Answer**

## Round 2 - Question 1

Alicia was paid \$125 for babysitting five days after school for the Smith family. Each day Mrs. Smith paid her \$3 more than the day before. How much money did she earn on the first day?

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**School Code**



**Answer**

## Round 1 - Question 2

It is 2:24 AM right now. Isaac's flight arrived yesterday at 11:20 PM. How many minutes have passed since?

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**School Code**

**Answer**

## Round 2 - Question 2

Cole's dormitory is 6 kilometers from the stadium. He takes the bus halfway to the stadium, and for the remaining distance, he plans to walk. After walking half the remaining distance, he takes a water break. After his water break, how many *meters* does Cole need to walk to reach the stadium?

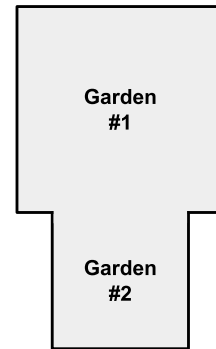
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**School Code**

**Answer**

## Round 1 - Question 3

Joseph has two square gardens connected along one side in his backyard. Garden #1 has an area of 256 square feet and Garden #2 has an area of 144 square feet. If he wants to fence in the outer perimeter of the gardens, how much fencing will he need?



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**School Code**

**Answer**

## Round 2 - Question 3

How many distinct ways can you arrange the letters in the word "SPAIN"?

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**School Code**

**Answer**

## Round 1 - Question 4

$$4^2 + 3^3 + 6^3 + 9^2 =$$

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**School Code**

**Answer**

## Round 2 - Question 4

You have volunteered to be the "barbeque chef" for a school party. Hot dogs must be flipped every 2 minutes and hamburgers must be flipped every 3 minutes. If they stay on the grill for 43 minutes, how many times will they be flipped at the same time?

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**School Code**

**Answer**

## Round 1 - Question 5

What is the four-digit number in which the first digit is one-third the second, the third is the sum of the first and second, and the last is three times the second?

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**School Code**

**Answer**

## Round 2 - Question 5

Two-fifths of a class earned an A on their quiz. Of the remaining students, 70% earned a B. If there are 50 students in the class, how many did NOT earn an A or a B?

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**School Code**

**Answer**

## Round 1 - Question 6

What is the sum of the prime numbers less than 20?

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**School Code**

**Answer**

## Round 2 - Question 6

A train leaves Rock City at an average speed of 50 miles per hour and heads for Gnome City. Another train leaves Gnome City at an average speed of 40 miles per hour and heads for Rock City. If the route is 360 miles long, how many hours will it take for the 2 trains to meet?

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**School Code**

**Answer**

## Round 1 - Question 7

If  $a = 4$  and  $b = 3$ , what is  $a^b + b \times a - b^2$ ?

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**School Code**

**Answer**

## Round 2 - Question 7

What is the product of the mean and median of the data set below?

1, 2, 5, 8, 12, 14, 21

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**School Code**

**Answer**

## Round 1 - Question 8

As a salesperson you are paid \$50 plus \$3 per sale. Suppose you want to get paid at least \$100. What is the minimum number of sales you must make?

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**School Code**

**Answer**

## Round 2 - Question 8

A basketball bounces back up approximately  $\frac{1}{2}$  the height from which it is dropped. If a basketball is dropped from 120 feet and keeps bouncing, what is its maximum vertical height after the 3rd bounce?

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**School Code**

**Answer**

## Round 1 Answers

1. 16
2. 184
3. 88 ft
4. 340
5. 1349
6. 77
7. 67
8. 17

Practice: 8

## Round 2 Answers

1. \$19
2. 1500
3. 120
4. 7
5. 9
6. 4 hours
7. 72
8. 15