

## 2022 Mini-Mathletes Ciphering Round

- Fill out your name, school, and grade for each sheet by pulling out only the top portion of each sheet, folding the pages over as you go.
- You will have 4 minutes to solve each problem.
- This will be divided into sections of 2 minutes.
- If you solve the problem correctly and turn in your answer to a staff member in the *first* 2 minutes, you will receive 11 points.
- If you solve the problem correctly and turn in your answer to a staff member in the *second* 2 minutes, you will receive 5 points.
- If you do not write down a correct answer or do not turn your answer in, you will receive 0 points.
- When I call “10 seconds” the first time, this signals that the first set of 2 minutes is ending. If you’re ready, hold up your sheet for us to collect. If you’re not finished, keep working!
- When I call “10 seconds” the second time, this signals that the second set of 2 minutes is ending. This is the final call for answers. Turn in anything you’ve got!
- Please place your answer to each problem in the box in the bottom right area.

**Good Luck! 😊**

Name: \_\_\_\_\_

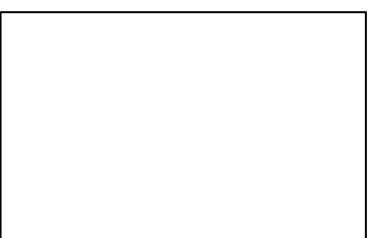
School: \_\_\_\_\_

Grade: \_\_\_\_\_

Practice Problem (No points)

### Practice Problem

Jack and his friends eat  $\frac{7}{10}$  of a birthday cake.  
What fraction of the cake is left?



Name: \_\_\_\_\_

School: \_\_\_\_\_

Grade: \_\_\_\_\_

11 points

5 points

0 points

### Problem 4

Evaluate the following expression:  $2^5 - 4 \times 6$



Name: \_\_\_\_\_

School: \_\_\_\_\_

Grade: \_\_\_\_\_

11 points

5 points

0 points

### Problem 9

Two fair 6-sided dice, one red and one green, are rolled (where the faces of the dice are labeled 1, 2, 3, 4, 5, 6). In how many ways can the sum of the numbers on the top face of the dice be a prime number? *Rolling a 1 on the red die and a 2 on the green die is different than rolling a 2 on the red die and a 1 on the green die.*



Name: \_\_\_\_\_

School: \_\_\_\_\_

Grade: \_\_\_\_\_

11 points

5 points

0 points

### Problem 3

A school store sells items for \$2, \$3, and \$5 and charges no tax. If Monique buys six \$2 items, nine \$3 items, and one \$5 item from this store, how much money does she spend in total?



Name: \_\_\_\_\_

School: \_\_\_\_\_

Grade: \_\_\_\_\_

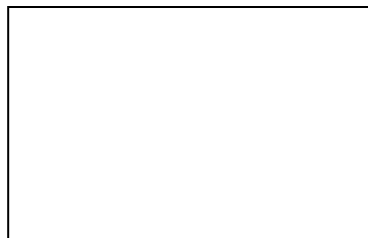
11 points

5 points

0 points

### Problem 8

In Luca's store,  $\frac{1}{9}$  of the shirts sold are striped.  $\frac{5}{8}$  of the *remaining* shirts have floral prints. The rest of the shirts are plain colored. If Luca's store has 30 plain colored shirts, how many more floral printed shirts than striped shirts does the shop have?



Name: \_\_\_\_\_

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Grade: \_\_\_\_\_

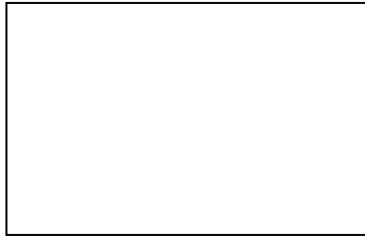
11 points

5 points

0 points

**Problem 2**

Water boils at 212 degrees Fahrenheit, and it freezes at 32 degrees Fahrenheit. How much greater is its boiling point than its freezing point?



Name: \_\_\_\_\_

School: \_\_\_\_\_

Grade: \_\_\_\_\_

11 points

5 points

0 points

**Problem 7**

An ice cream shop offers mint chip, chocolate, strawberry, and vanilla flavors of ice cream and chocolate or rainbow sprinkles for a topping. By choosing one flavor of ice cream and a topping of sprinkles or no sprinkles, how many different combinations are possible?



Name: \_\_\_\_\_

School: \_\_\_\_\_

Grade: \_\_\_\_\_

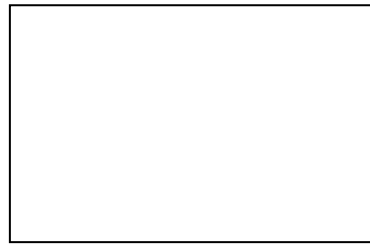
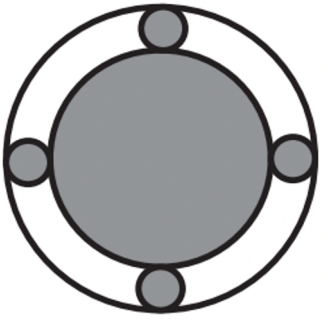
11 points

5 points

0 points

### Problem 10

The figure below shows five shaded circles within a circle of radius 7. The four small identical circles touch the outer circle and the large shaded circle. The radius of each of the smaller shaded circles is  $\frac{1}{5}$  the radius of the large shaded circle. What is the total area of all the shaded regions? Express your answer in terms of  $\pi$ .



Name: \_\_\_\_\_

School: \_\_\_\_\_

Grade: \_\_\_\_\_

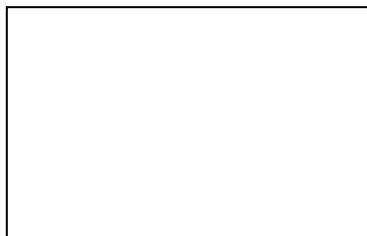
11 points

5 points

0 points

### Problem 5

Let A represent the area of a square with side length 16, and let B represent the perimeter of the same square. What is the value of  $A + B$ ?



Name: \_\_\_\_\_

School: \_\_\_\_\_

Grade: \_\_\_\_\_

11 points

5 points

0 points

**Problem 1**

What is the sum of all the odd numbers between 0 and 12?



Name: \_\_\_\_\_

School: \_\_\_\_\_

Grade: \_\_\_\_\_

11 points

5 points

0 points

**Problem 6**

At a candy store, Alexis purchased 3 candy bars for \$1.50. At this rate, how many whole candy bars can she buy with \$49.99?

