

**5<sup>th</sup> – 6<sup>th</sup> Grade**  
**Regional Math Meet Tests**  
**2020**

- **Individual Problems**
  - Event 1: Problem Solving (No Calculator)
  - Event 2: Problem Solving (With Calculator)
  - Event 3: Mathematical Reasoning
  - Event 4: Mental Math
  
- **Team Problems**
  - Event 5: Team Problems
  
- **Tie Breaker Question**

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

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

Circle your final  
answer!

**Event 1: Computations Without Calculator- 20 points total**

Part I (2 points each)

**Remember to simplify all fractions if able!**

1.  $6\frac{2}{3} - 4\frac{2}{5} \div 1\frac{1}{3}$

2.  $(8.42 - 10.034) \times 1.8$

3. If  $x = -2$  and  $y = -4$ , find the value of  $-2x - 3y$

4. Find the Least Common Multiple of 8, 20, and 30

5.  $-5\frac{3}{5} \times 3\frac{4}{7}$

Name: \_\_\_\_\_ School Team: \_\_\_\_\_

Circle your final  
answer!

**Event 1: Computations Without Calculator- 20 points total**

Part II (2 points each)

**Remember to simplify all fractions if able!**

1. Find the reciprocal of  $-34\frac{6}{7}$

2. How many hours are in 12.5% of a week? Remember to label.

3.  $(5 + \frac{7}{9}) \times \frac{3}{4} \div 3$

4. Find 0.3% of 52

5.  $5.6 \times 7.8 \div 2.4$

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Circle your final  
answer!

**Event 2: Computations With Calculator- 25 points total**

Consumer Math (5 points each)

1. A movie grosses \$31.4 million on its premier weekend. If the sequel is expected to surpass this amount by 15.9%, how much will the sequel gross?
2. Roman wants to purchase a car. The list price is \$19,899. He offers to buy the car for 10% less than the listed price. The salesman counters with a price 5% higher than Roman's offer. What is the counteroffer? Remember to always round to the nearest cent.
3. Ian can buy 3 pounds of tomatoes for \$4.95 at Store A. He knows that Store B offers 4 pounds of tomatoes for \$6. Ian wants to buy 22 pounds of tomatoes to buy salsa. Both stores offer to sell single pounds of tomatoes. How much money will he save by purchasing the tomatoes at the store offering the better deal?
4. Laney gets a salary increase of 10% each year. By what percentage has her original salary increased after four such raises?
5. A local vendor needs \$2.14 of materials to make a craft to sell. It takes the vendor approximately 2 hours and 20 minutes to make each craft. Originally, she sold each item for \$15. In order to make an hourly wage of at least \$12 an hour, by what percent should she increase the price of the item?

Name: \_\_\_\_\_ School Team: \_\_\_\_\_

**Event 3: Mathematical Reasoning With Calculator- 35 points total**

Circle your final  
answer!

Part I: Algebra (7 points each)

**Remember to use labels when appropriate**

1. Parrot A is 4 times as tall as Parrot B. Parrot C is  $\frac{5}{8}$  the height of Parrot A. If the total height of all three parrots combined is 225cm, find the height of Parrot B.
  
2. A local woodworker makes stools and tables. Each stool she makes has 3 legs and each table she makes has 4 legs. All tables and stools use the same size legs. The woodworker has 35 legs to use to make tables and stools this weekend. She wants to use all the legs that she has, leaving none remaining. Find all possible combinations of stools and tables that she might make.
  
3. A family has three children. The oldest child is as old as the combined ages of the younger two. The middle child is two years older than the youngest child. A year ago, their combined ages was  $\frac{3}{4}$  of the sum of their current ages. Find the ages of the three children.

Name: \_\_\_\_\_ School Team: \_\_\_\_\_

**Event 3: Mathematical Reasoning With Calculator- 35 points total**

Circle your final  
answer!

Part II: Algebra (7 points each)

**Remember to use labels when appropriate**

4. The seating capacity of an auditorium is 600. The auditorium is not filled. We know that \$350 worth of tickets were sold, and that the price of an adult ticket was 75 cents. The price of a child's ticket was 25 cents. Find the minimum number of adult tickets sold.
  
  
  
  
  
  
  
  
  
  
5. Everett spent a quarter of his allowance on a movie. He then spent  $\frac{11}{18}$  of the remainder on snacks. Later that day, he gave \$3 to a local charity. This left him with only  $\frac{1}{24}$  of his original allowance, which he decided to save. Find the amount of money that Everett saved that week.

Name: \_\_\_\_\_ School Team: \_\_\_\_\_

**Event 4: Mental Math (no calculator)- 20 points total**  
(2 points each)

Example: \_\_\_\_\_

1) \_\_\_\_\_

2) \_\_\_\_\_

3) \_\_\_\_\_

4) \_\_\_\_\_

5) \_\_\_\_\_

6) \_\_\_\_\_

7) \_\_\_\_\_

8) \_\_\_\_\_

9) \_\_\_\_\_

10) \_\_\_\_\_

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

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

Circle your final  
answer!

**Event 5: Team Problems (with calculator)- 100 points total**

Part 1: Measurement (5 points each)

**Remember to label answers as needed.**

1. Andrew starts a project at 10AM. He finishes 800 minutes later. What time is it when he completes the project? Remember to label AM or PM.
2. Each day has 20 naps. Each nap lasts 40 winks. How many seconds are in one wink?
3. Find  $48^{\circ}3'' - 29^{\circ}11''$ .
4. Pablo wants to run 3 miles on a local track. He knows that 3 laps is  $\frac{5}{8}$  of a mile. How many laps should Pablo run?
5. Three people stood at the starting line of a 250m circular track, facing the same direction. At the same time, they all began going around the track at a steady speed. The first person went 5km/hour, the second person 4km/hour, and the third person 3km/hour. How many minutes will it be until all three are crossing the starting line at the same time?



Name: \_\_\_\_\_ School Team: \_\_\_\_\_

Circle your final  
answer!

**Event 5: Team Problems (with calculator)**

Part 2: Sequences (5 points each)

1. Below are two sequences. Notice that the number 95 appears in both of them. Find the next number that will appear in both sequences.

Sequence A: 19, 95, 171, 247, ...

Sequence B: 20, 45, 70, 95, ...

2. Find the ones digit of  $2^{50}$ .
3. Find the 2020<sup>th</sup> letter in the pattern AABBBCCCCAABBBCCCC...
4. I have a sequence of consecutive integers. The sum of the third and fourth terms is 47. Find the sum of the first 5 terms of the sequence.
5. Find the next term of the sequence 1, 4, 27, 256, ...

Name: \_\_\_\_\_ School Team: \_\_\_\_\_

Circle your final  
answer!

**Event 5: Team Problems (with calculator)**

Part 3: Number Theory (5 points each)

1. Find the last two digits of  $5^{2020}$
2.  $M \div 5$  has a remainder of 2.  $N \div 5$  has a remainder of 4. Find the remainder of  $(M + N) \div 5$ .
3. There are a dozen tickets numbered 1-12, one number per ticket. They are separated into two different piles, then the sum of each pile is found. The sum of both piles was surprisingly the same number. Find that sum.
4. Find the sum of all integers between 100 and 250 which are divisible by 6 and have a last digit of 6.
5. A Pythagorean quadruple is a set of positive integers  $a$ ,  $b$ ,  $c$ , and  $d$  that satisfy the equation  $a^2 + b^2 + c^2 = d^2$ . If 2, 9, and 11 are three of the four integers that form a quadruple then find the fourth integer.

Name: \_\_\_\_\_ School Team: \_\_\_\_\_

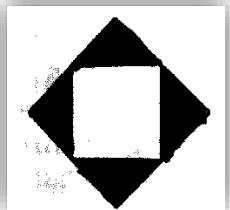
Circle your final  
answer!

**Event 5: Team Problems (with calculator)**

Part 4: Geometry (5 points each)

**Remember to label answers as needed.**

1. One angle of a triangle is double the size of the first angle. The third angle is 40 degrees less than the first angle. Find the measure of the smallest angle.
2. Two opposite sides of a square are increased in length by 25%. The other two sides are decreased by 40%. Find the decrease in area from the original square to the resulting rectangle.
3. The hypotenuses of four congruent isosceles right triangles serve as the sides of a square, as shown. If the area of that unshaded square is  $18\text{cm}^2$ , find the area of the shaded region.



4. A local pizza place offers one large pizza or two small pizzas for the same price. A large pizza has a 12in diameter and a small pizza has an 8in diameter. If you're looking to get more pizza, should you order one large pizza or two small pizzas?
5. If the square root of the perimeter of a square is 6cm, find the area of the square.

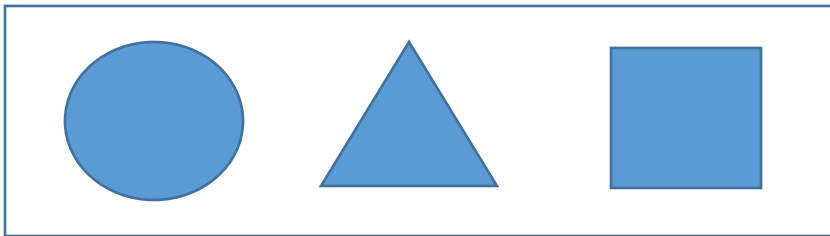
Name: \_\_\_\_\_ School Team: \_\_\_\_\_

Circle your final  
answer!

### **TIE BREAKER**

*Write all answers as a fraction. Remember to simplify!*

1. In a Kindergarten class, each child is given a red crayon and a green crayon. They are asked to color a circle, a triangle, and a square. Each shape can only be colored using one color. How many different ways could the children color the picture?



2. Gary typed a 6-digit number into his calculator. Unfortunately, the “1” key is broken and the two ones he typed didn’t show up. The calculator displayed the number 2020. How many different 6-digit numbers could Gary have typed?
3. Each day Santos makes an open-faced sandwich using only one slice of bread. He uses one kind of meat or one kind of cheese or one kind of each. If he chooses from 4 types of bread, 5 kinds of meat, and 3 kinds of cheese, how many different sandwiches can he make?