5th - 6th Grade
Regional Math Meet Tests
2015

- Individual Problems
  - Event #1: Problem Solving (No Calculators)
  - Event #2: Problem Solving (With Calculators)
  - Event #3: Mathematical Reasoning
  - Event #4: Mental Math

- Event #5: Team Problems

- Tie Breaker Question

Name: _____   School: _____

Event 1: Problem Solving (No Calculators)

Write answers as whole or mixed numbers only.

Part 1: Computation *(2 points each)*   Answers

   1.) $9.2 \times 5 =$ _____

   2.) $2\frac{3}{4} \div \frac{1}{4} =$ _____

   3.) $6 + 4(2) - (1 + 5) =$ _____

   4.) $\frac{1}{7} = \frac{4}{?}$? is equal to _____

   5.) $4(? - 2) = 20$? is equal to _____

Name: _____   Team: _____

Event 1: Problem Solving (No Calculators)

Part 2: Consumer Math *(5 points each)*

   1.) A department store marked up the cost of a pair of sunglasses by 20%.
       After several weeks, the department store reduced the selling price by
       25%. If the department store originally paid $20 for the pair of sunglasses,
       how much did the department store lose after the 25% off sale?

                                                                    _____

   2.) A health and fitness club charges a $50 initial fee for membership, and
       then $3.00 for every time a member uses the facilities. How many times
       did a member use the facility in the first month of membership if their
       monthly charge was $107?

                                                                    _____

Name: _____   Team: _____

Event 2: Problem Solving (With Calculators)

Part 1: Probability *(4 points per question; 2 points each answer)*

For each question, **write your answer as a fraction and as a percent**. Write fractions in simplest form.

Marcus put ten marbles in a bag. There are four blue marbles, three red marbles, one yellow marble, and two white marbles in the bag.

1) What is the probability Marcus picks a blue marble out of the bag?

_____ or _____%

2) Marcus picked a white marble, and then put it back in the bag. Afterwards, he picked a red marble. What are the chances of Marcus picking a white followed by a red marble (with replacement)?

_____ or _____%

3) Marcus picked a red marble, didn't replace the red marble, and then picked a yellow marble out of the bag. What is the probability of this happening?

_____ or _____%

4) What is the probability of Marcus picking an orange marble?

_____ or _____%

5) Marcus emptied the original bag of marbles and only put the blue and yellow marbles back in the bag. What are the chances Marcus does not pick a blue marble?

_____ or _____%

Name: _____   Team: _____

Event 2: Problem Solving (With Calculators)

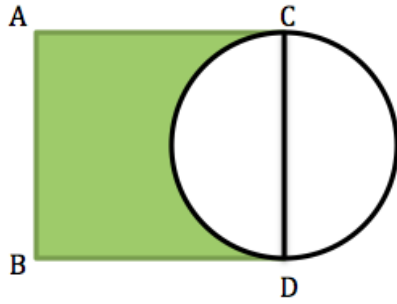Part 2: Consumer Math *(5 points)*

Mary, Jessica, Sandra, and Judy are going on a road trip to Washington, D.C. They decided to split the expenses evenly for the trip. Sandra made the hotel reservations for two nights. Each night cost $153, and then she applied a coupon for 15% off the stay. Judy spent $116 for gasoline each way, and Mary spent $156 on food expenses. Jessica purchases miscellaneous expenses, and she spent $73. After they totaled the expenses, they split the total four ways. How much did each friend pay? Round to the nearest penny if necessary.
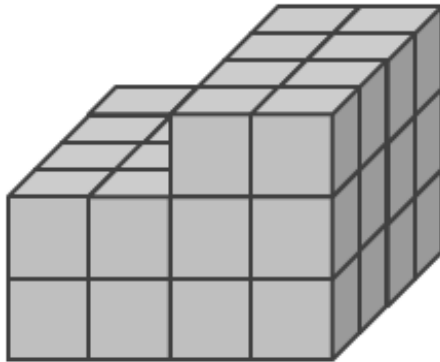
_____

Name: _____   Team: _____

Event 3: Mathematical Reasoning *(10 points each)*

1) In the square ABCD below, side length AC is 4 inches. The circle overlays the square and has a diameter of CD. What is the approximate area of the shaded region? Round to the nearest hundredth.

_____
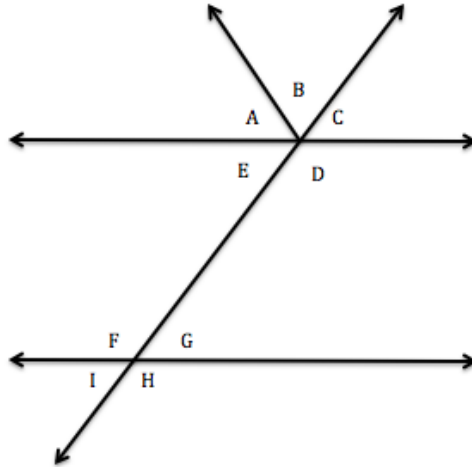
2) Find the volume of the following figure.

_____

Name: _____   Team: _____

Event 3: Mathematical Reasoning *(5 points each)*

For questions 3, 4, and 5, please refer to the following figure.
<u>Hint:</u> Angle E is equal to Angle G.

3) The measurement of angle F is 95 degrees. What is the measurement of angle E?

_____

4) Angle C is the same measurement as angle G. What is the sum of angles A and B?

_____

5) (Angle C + Angle G) – Angle H = ….

_____

Name: _____   Team: _____

Event 4: Mental Math *(2 pts each)*

Example: _____

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Name: _____   Team: _____

Event 5: Team Problems   Question 1 *(5 points each; 25 total)*

A ❖ B = (A + B) ÷ B

C □   = C + 5

For example: 3❖1 = (3+1) ÷ 1 = 4 ÷ 1 = 4

1) 4 ❖ 2 =   _____

2) (24 ❖ 3) + 8□   =   _____

3) 2□   - (8❖1) =   _____

4) (9□) ❖2 =   _____
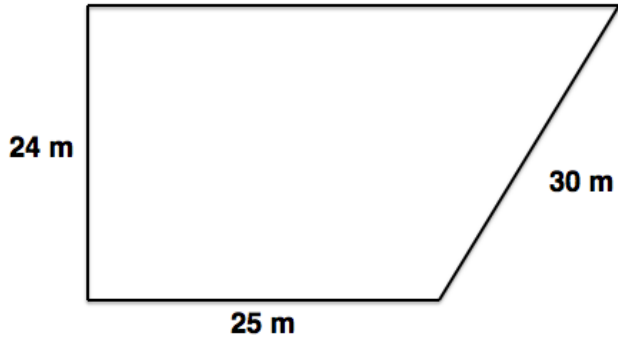
5) (7□) ❖(1□) =   _____
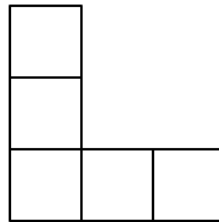
Name: _____   Team: _____
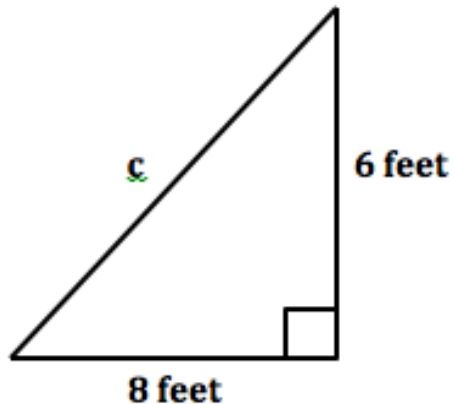
Team Problems: Question 2 *(24 points; 8 points per question)*

1.) The Pike family has plans to purchase land to build a new house. Below is a diagram of the lot. What is the square area of the lot?

24 m

30 m

25 m

_____

2.) The figure below is composed of five squares. If the perimeter of the figure is 60 units, what is the area in square units?

_____

3.) What is the length of side c?

c

6 feet

_____

8 feet

Name: _____   Team: _____

Team Problems: Question 3 *(25 points)*

What is the average (arithmetic mean) of 2x + 1, 3x – 4, 5x + 3, and 2x + 8?

_____

Name: _____   Team: _____

Team Problems: Question 4 (26 points)

Conversions	
1 foot	12 inches
1 gallon	4 quarts
1 pint	2 cups
1 minute	60 seconds
1 quart	2 pints

A water hose is leaking at a rate of 10 gallons every minute. How many cups is the hose leaking every second? Round to the nearest tenth.

_____

A swimming pool is being filled at the rate of one pint every second. If the swimming pool holds 700 gallons, how long will it take to fill the pool in minutes? Round up to nearest minute.

_____

Name: _____   Team: _____

Tie Breaker

Square ABCD is divided into three right triangles. What is the approximate perimeter of triangle AGF? Round to the nearest hundredth.

_____