5th/6th grade Math Meet '12

Name:_____ School Team: _____

Event 1: Problem Solving (no calculators)

Part 1: Computations. (2 pts. each)

1) $x / 3 = 8/12$ **x=_____**

2) $80/ x = 5$ **x=_____**

3) $6 (12 - x) = 42$ **x=_____**

4) $18 + 3x = 54$ **x=_____**

5) $0.12 \div x = 3$ **x=_____**

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Event 1: Problem Solving (no calculators)

Part 2: Problem solving involving the order of operations. (2 pts. each)

Use the order of operations to evaluate each problem. If your answer is a fraction, write it in simplest form. No decimal answers.

1) $4(3) - 9 \div 3$

2) $124 - 8 \cdot 7 + 12$

3) $5^2 + 4 - 3$

4) $15 + 2 \cdot 3$

5) $(2)(3) - 1 + 4$

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Event 2: Problem Solving (with calculators)

Equivalent Fractions and Decimals.

Part 1: (2 points each)

Write the improper fractions as whole or mixed numbers.

1) $\frac{10}{7}$

2) $\frac{38}{21}$

Write the mixed numbers as improper fractions.

3) $3\frac{1}{8}$

4) $6\frac{2}{3}$

Write the decimal as the fraction equivalent, reduce answer to lowest term.

5) 0.025

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Event 2: Problem Solving (with calculators)

Part 2: Application problems working with equivalent fractions and decimals.
(3 pts. each)

1) A measure of 0.75 inches represents what fractional part of an inch?

2) An instrument weighs 0.84 pounds. Write this as a fraction of a pound. Write the fraction in simplest form.

3) An aerial map shows a building measuring $2\frac{3}{10}$ inches on one side. What is the measure of the side of the building as an improper fraction?

4) A B-767-200 aircraft has a wing span of 47.6 meters. What is the wing span written as a mixed number in simplest form?

5) The length of a screw is 2.375 inches. Represent this length as a mixed number in simplest form.

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Name:_____School Team:_____

Event 3: Logic and Reasoning (with calculators)
Part 1: Application problems involving addition and subtraction of fractions.
(15 points)
Answer the following questions. (3 points each)

1) What is the thickness of a countertop made of $\frac{7}{8}$ inch plywood and $\frac{1}{16}$inch Formica?

_____ inch

2) A length of bar stock 16 $\frac{3}{8}$ in. long is cut so that a piece only 7 $\frac{9}{16}$ in. long remains. What is the length of the cutoff piece? Disregard waste.

_____ inches

3) Three pieces of steel are joined together. What is the total thickness if the pieces are $\frac{29}{32}$ in., $\frac{1}{2}$in., and $\frac{7}{16}$in.?

_____inches

4) If 5 $\frac{1}{8}$ cups of water are mixed with $\frac{3}{4}$cup of Kool Aid, how many cups are in the mixture?

_____cups

5) A flower bed includes 7 $\frac{7}{8}$in. of base fill. If the bed is to be 18 in. thick, how thick must the topsoil be?

_____inches

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Name:_____School Team:_____

Event 3: Logic and Reasoning (with calculators)

Part 2: Application Problems involving multiplication and division of fractions. Answer can be written as decimal or fraction.
(20 points)

Answer the following questions. (4 points each)
1) A fuel tank that holds 75 liters (L) of fuel is ¼ full. How many liters of fuel are in the tank?

2) If steps are 12 risers high and each riser is 7 ½ in. high, what is the total rise of the steps?

3) A company is making drinking straws. Answer the questions that follow:
   a. How many 9 ¼ in. drinking straws can be cut from a 216 ½ in. length of stock?

   b. How much stock is left over?

4) Three shelves of equal length are cut from a 72-in. board. if ⅛ in. is wasted on each cut, what is the maximum length of each shelf? (Two cuts are made to divide the entire board into three equal lengths.)

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Name:_____ School Team:_____
Event 4: Mental Math (no calculators) Each answer is worth 2 points.

Example) _____

1)_____ 6)_____

2)_____ 7)_____

3)_____ 8)_____

4)_____ 9)_____

5)_____ 10)_____

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Name:_____School Team:_____
Event 5: Team Problems (with calculators)

Problem 1: Conversions with U.S. Customary Units. (25 points)
(5 pts each, no partial credit)

Unit ratios that you may use:

12 inches = 1 foot
3 feet = 1 yard
1 mile = 5280 feet
3 teaspoons (t) = 1 Tablespoon (T)
8 ounces (oz) = 1 cup (c)
2 cups (c) = 1 pint (pt)
2 pints = 1 quart (qt)
2 tablespoons (T) = 1 ounce (oz)
4 quarts (qt) = 1 gallon (gal)

Add or subtract the following using unit ratios:

1) 3 ft + 2 in = _____ in

2) 2 t + 3 T = _____t

3) 5 yds + 15 inches = _____ in

4) Subtract 2 ft from 68 inches. _____ in

5) Subtract 3 cups from 2 quarts. _____ cups

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Name:_____ School Team:_____
Event 5: Team Problems (with calculators)

Problem 2: What percent is that? (20 points)
(4 points each, no partial credit) LABEL YOUR ANSWERS!

1) A 5% sales tax is levied on an order of building supplies costing $127.32. What is the amount of sales tax to be paid? Round to the nearest cent.

2) A certain ore yields an average of 67% iron. How much ore is needed to obtain 804 pounds of iron?

3) In a welding shop, 104,000 welds are made. If 97% of them are acceptable, how many are acceptable?

4) A landscape contractor figures it costs ½ % of the total cost of a job to make a bid. What would be the cost of making a bid on a $115,000 job?

5) Estimate to the nearest cent a 15% tip on a restaurant bill of $31.15.

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Name:_____School Team:_____
Event 5: Team Problems (with calculators)

Problem 3: Percents, what is left? (25 points)
(5 points each, no partial credit) LABEL YOUR ANSWERS!

1) A chicken farmer bought 2,575 baby chicks. Of this number, 2060 lived to maturity. What percent loss was experienced by the chicken farmer?

2) Ciara Walker was earning $49,860 and received a 7% raise. Find her new annual earnings.

3) When making an estimate on a job, a contractor wants to make a 10% profit. If all the estimated costs are $15,275, what is the total bid of cost and profit for the job?

4) If 17% extra flooring is needed to allow for waste when boards are laid diagonally, how much flooring should be ordered to cover 2,045 board feet of floor? Answer to the nearest whole board foot.

5) Julio made $15.25 an hour but took a 20% pay cut. What was the new hourly pay?

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Event 5: Team Problems (with calculators)

Problem 4: Function Machines (30 points)

Part 1: Function Machine #1 (2 pts. each)

Here is a function machine. You need to determine what they do so that you can fill in the missing input or output.

Function Machine 1

1	⟹	**4**
2	⟹	**-4**
3	⟹	**-12**
1) **5**	⟹	**?**
2) **9**	⟹	**?**
3) **?**	⟹	**-100**
4) **?**	⟹	**20**

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Name:_____ School Team:_____
Event 5: Team Problems (with calculators)

Problem 4: Function Machine

Part 2: Function Machine #2 (2 points each)

Function Machine 2

0	⇒	**0**
5	⇒	**50**
15	⇒	**51**
253	⇒	**352**

1)	**45**	⇒	**?**
2)	**78**	⇒	**?**
3)	**?**	⇒	**672**
4)	**?**	⇒	**1**

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Event 5: Team Problems (with calculators)

Problem 4: Function Machine

Part 3: Function Machine #3

Function Machine 3

1	⇒	**0**
2	⇒	**3**
3	⇒	**8**
4	⇒	**15**
1) **5** (3 points)	⇒	**?**
2) **10** (3 points)	⇒	**?**
3) **?** (4 points)	⇒	**399**
4) **?** (4 points)	⇒	**2499**