"Math is Cool" Championships – 2011-12

Sponsored by:

5th Grade – March 23, 2012

GENERAL INSTRUCTIONS/INFORMATION applying to all tests and awards:

- *Good sportsmanship is expected throughout the competition by all involved; both competitors and observers. Display of poor sportsmanship may result in disqualification.*
- *Calculators or any other aids may not be used on any portion of this contest.*
- *Unless stated otherwise, all rational, non-integer answers need to be expressed as reduced common fractions except in case of problems dealing with money. In the case of problems requiring dollar answers, answer as a decimal rounded to the nearest hundredth (ie, to the nearest cent).*
- *For fifth and sixth grade, all fractions and ratios must be reduced to simplest form.*
- *Counting or natural numbers refer to the numbers 1,2,3,4 and so on – zero (0) is NOT included.*
- *Units are not necessary as part of your answer unless it is a problem that deals with time and in that case, a.m. or p.m. is required. However, if you choose to use units, they must be correct.*
- *Leave all answers in terms of π where applicable.*
- *Do not round any answers unless stated otherwise.*
- *Record all answers on the colored cover sheets in the answer column only.*
- *Make sure all answer sheets have all the information (name, team number, etc.) at the top of the sheet filled out.*
- *Tests will be scored as a 0 if answers are not recorded on the answer sheets.*
- *Blank answer sheets and answer sheets with no name will be scored as a 0.*
- *Individual Awards are determined by the sum of an individual's Mental Math score and Individual Test score. Individual Mental Math contributes to approximately 8% of the individual score. Individual ties are broken based on the following in this order: total individual points, total questions answered correctly, individual Mental Math score, total correct from Individual Test problems 31-40, total correct from Individual Test questions 16-30, single questions answered correctly on the Individual Test starting with question 40 and working backwards.*
- *Team Awards are determined by the team score which is calculated by 2(Top 3 Mental Math scores) + 2(Multiple Choice) + 6(Team) + 3(Relay) + (College Bowl) for approximate weights of 25%, 20%, 30%, 15% and 10% respectively. Team ties are broken based on highest event score in order of events starting with Mental Math.*

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Name_____Team #_____ Room #_____

School Name _____ Proctor Name_____

Mental Math Contest

MENTAL MATH - 30 seconds per question – 25% of team score

When it is time to begin, the proctor will read the first question twice. You may not do any writing or talking while arriving at a solution. Once you have a solution, record it on the sheet in front of you. ***You may not change or cross out answers once you have written an answer down. If there are eraser marks, write-overs, or crossed-out answers, they will be marked wrong.*** *Once all students have laid their pencils on the desk, another question will be asked. If a student doesn't lay his/her pencil down, the maximum wait time is 30 seconds after completion of the second reading of the question before another question is asked. You may continue to work on a problem while the next question is being read. The value of each question is a one or zero. Each student will be asked the same eight questions. Individual scores used to determine individual placing will be determined by the sum of the Mental Math score and the Individual Test score for each individual. In addition, the top three Mental Math scores from one team will be totaled and doubled and will contribute to 25% of the team score.*

Question	
1	Amy has 3 pennies in her right pants pocket, 2 pennies in her left pants pocket, and 4 pennies in her shirt pocket. How many pennies does she have in all?
2	What is the quotient of 24 divided by 6?
3	What is the area, in square inches, of a rectangle with sides of length 5 inches and 8 inches?
4	Francie is counting by sevens. The first number she says is 7 and the second number she says is 14. What will be the ninth number Francie will say?
5	What is the perimeter, in inches, of a regular hexagon with side length 4 inches?
6	A bag contains 5 red marbles, 3 blue marbles, and 7 green marbles. If a marble is randomly selected from this bag, what is the probability that it is green? Give answer as a fraction.
7	A group of 5 turtles has an average weight per turtle of 22 ounces. What is the total weight in ounces of all 5 turtles?
8	How many **EVEN** counting numbers will divide into 48 with no remainder?

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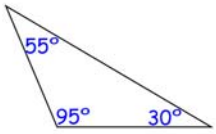
5th Grade – March 23, 2012

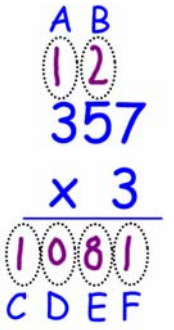
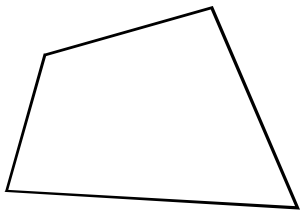
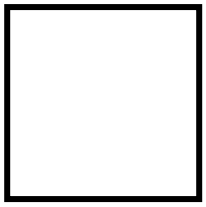
Individual Contest

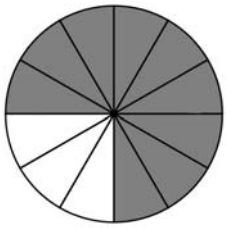
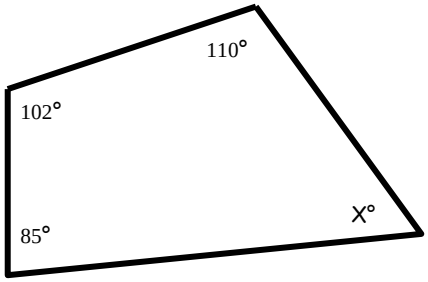
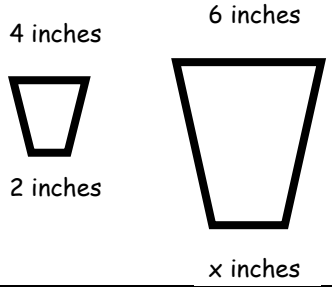
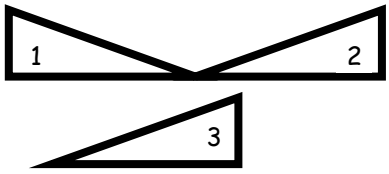
INDIVIDUAL TEST - 35 minutes – 40 problems

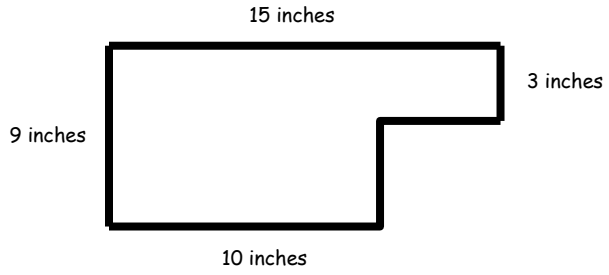
You may NOT be seated next to anyone from your school. If you are, MOVE NOW to avoid being disqualified! When you are prompted to begin, tear off the colored sheet and begin testing. Make sure your name and school are recorded on the answer sheet. The raw score will be 2 points for correct answers to problems 1-30 and 3 points for 31-40. Record your answers on the score sheet. No talking during the test. You will be given a 5 minute time warning.

Record all answers on the colored cover sheet.

	Questions 1-30: 2 points each
1	Is the triangle acute, right or obtuse? 
2	Let: A = 0.9 B = 1.2 C = 0.89 Put the values A, B, C in order from smallest to largest. Your answer should be three letters in the correct order.
3	Find the sum of 8,675.309 and 3.14159. Answer as a decimal.
4	The Wild Cats have saved $50.00 to buy mascot costumes. If each costume costs $15.75, how many costumes will the Wild Cats be able to purchase?
5	Which mathematical "sentence" is true? Give the letter of the true "sentence". (A) $52.25 = $25.52 (B) $83.14 < $14.97 (C) $83.14 > $14.97 (D) $14.97 > $83.14

6	Adam worked this multiplication problem incorrectly. Write the letter that is next to the circle that has the wrong number where Adam made his first mistake. 
7	Which shape is shown? Only one answer is correct. Answer with a letter. A) Rectangle B) Trapezoid C) Square D) Quadrilateral E) Parallelogram F) Rhombus 
8	How many sides does a hexagon have?
9	Find the product of $\frac{7}{10}$ and $\frac{4}{7}$, and simplify your answer.
10	Find the value of 3N + 7 when N = 4.
11	Let $A = (4 \times 10) - 7$ and $B = 4 \times (10 - 7)$. Which has the larger value, A or B?
12	What is the mean average of the following set of data? 4, 5, 7, 9, 10
13	Which sign goes in the blank to make the following sentence true? <, > or = -5 _____ -19
14	How many lines of symmetry does the following square have? 
15	How many prime numbers are between 1 and 24?

16	Each section of the circle shown in the figure has the same area. What fraction of the area of the figure is shaded? Write the answer as a reduced fraction. 
17	Find the value of X. 
18	From the following list of numbers, pick the two numbers (in order) that could fill the blanks to make the following equation true: ___ ÷ ___ = 7 . Answer with two letters in the correct order. A = 17 B = 105 C = 15 D = 56
19	The two shapes are similar. Find the value of x. 
20	Starting with triangle 1 and ending with triangle 3, what is the sequence of transformations? Answer with a letter. A) translation, then rotation B) rotation, then reflection C) reflection, then rotation D) reflection, then translation 
21	Arianna took a 63-question test that had equal number of questions in each section. How many questions were in each section? Give the letter of a possible answer. A) 5 B) 6 C) 7 D) 8

22	For each dollar Willis earns, he puts a quarter, a dime, and a penny in the bank. If he has earned $87, how much money, in dollars, has he put in the bank?
23	The sum of the ages of Adam and Brandt is 115 years. Adam is 45 years younger than Brandt. How many years old is Brandt?
24	Find the area, in square inches, of the following figure. Angles that appear to be 90° are 90°. 
25	Annie is buying supplies to make s'mores. She buys one hundred marshmallows, two boxes of graham crackers each containing 36 individual graham crackers, and 10 chocolate bars. She makes s'mores until she runs out of supplies, using 2 marshmallows, one graham cracker and one-fourth of a chocolate bar to make each s'more. Write the letter of the item they will run out of first. A) Marshmallows B) Graham Crackers C) Chocolate
26	To build a fire, Shawn starts with a large stump, which will burn for 20 minutes. For every piece of firewood he adds, the fire will burn for an extra 4 minutes. How many pieces of wood must he add if he wants the fire to last for at least 1.5 hours?
27	A sheet of paper is $\frac{1}{102}$ inches thick. How many sheets of paper does it take to make a pile $2\frac{1}{2}$ inches thick?
28	Amanda can walk 5 miles in one hour. Lindy can walk 4 miles in one hour. Their school is 1 mile away for each of them. To arrive at school at the same time, how many minutes earlier does Lindy need to leave than Amanda?
29	Biff and Eho are climbing a mountain that is 10,000 feet high. They start at sea level. Each day they climb 2000 feet, but each night when they fall asleep they slide down the mountain 300 feet. How many days will it take them to reach the top of the mountain?
30	After the Math is Cool contest tonight, a math team stops by a local ice cream shop that has 5 flavors of ice cream. Each mathlete buys a double scoop with two different flavors of ice cream. If every mathlete chooses a different pair of flavors and every different pair of flavors is chosen, how many mathletes are on the team?

Challenge Questions: 3 points each	
31	A palindrome is a counting number that reads the same backwards as forwards. For how many three-digit palindromes are all of the digits prime numbers?
32	The average of 47 and my number is the same as the average of –86 and 318. What is the average of my number and -1?
33	Lisa has three stacks of stickers. The second stack has 14 more stickers than the first, and the third stack has 15 more stickers than the second. How many stickers does the first stack have if there are 487 stickers total?
34	Max has a closed rectangular box partly filled with sand. The box is 2 by 4 by 5 inches. When he stands the box on a level surface on its largest face, the sand in the box is 1.25 inches deep. When he stands the box on its smallest face, how many inches deep is the sand? If your answer is not a whole number, give it as a decimal.
35	I'm thinking of a 5-digit counting number that has no remainder when divided by 5. The product of the digits of my number is 240. What is the smallest my number could be?
36	Louisa starts with 200 candles. Each candle burns for exactly 30 minutes and then goes out, leaving a stub. With 4 stubs, Louisa can make one new, complete candle. If Louisa lights only complete candles, what is the largest number of hours her candles can burn? If your answer is not a whole number, give it as a mixed number.
37	In a certain video game, a player that captures an opponent gains one point for a capture, plus all the points the captured player had. For example, if player A with 2 points captures player B with 5 points, player A's point total rises to 8 points and player B is out of the game. Cam (with 7 points), Dan (with 4 points), Ed (with 2 points), and Fred (with ? points) play until there is only one player left un-captured. This last player ends with a total of 19 points. How many points did Fred start with?
38	Mandy's mystery number is 36. When 36 is added to the sum of its digits, the result is $36+3+6=45$. When Sandy's mystery whole number is added to the sum of its digits, the result is 833. What is Sandy's mystery number?
39	The first card Jon draws from a standard deck is a face card (jack, queen, or king). He keeps this card and draws a second one. If he draws at random, what is the probability that Jon now has a pair of kings? Answer as a reduced fraction.
40	In how many ways can 15 one-dollar bills be shared among Annie, Bobbie, and Cindy so that each person gets at least $1, and Annie and Bobbie each get at least as much money as Cindy? No bills are cut or torn.

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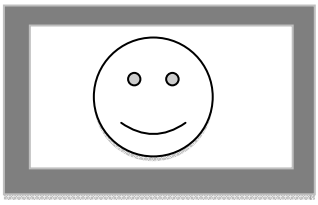
Team Multiple Choice Contest

	USE THE FOLLOWING INFORMATION FOR PROBLEMS 1-3. Samantha has a sock cupboard filled with different types of socks. She has 8 pairs of striped socks, 10 pairs of polka-dotted socks, and 4 pairs of fuzzy black socks. Only the black socks are fuzzy, and each sock is separate (not attached to its mate).
1	If she randomly draws 1 single sock out of the sock cupboard, what is the probability of drawing either a striped sock or a fuzzy black sock? A) $\frac{4}{11}$ B) $\frac{6}{11}$ C) $\frac{5}{11}$ D) $\frac{7}{11}$ E) Answer not given.
2	Samantha closes her eyes and grabs a random sock out of the sock cupboard. The sock is not fuzzy. What is the probability that the sock she grabbed is a striped sock? A) $\frac{4}{9}$ B) $\frac{4}{11}$ C) $\frac{6}{11}$ D) $\frac{4}{7}$ E) Answer not given.
3	With her eyes closed and with gloves on, Samantha wants to pick a pair of socks from the sock cupboard. What is the minimum number of socks she must pull out to guarantee a pair of either fuzzy or striped socks? A) 4 B) 23 C) 13 D) 8 E) Answer not given.
	USE THE FOLLOWING INFORMATION FOR PROBLEMS 4-6. Jae painted a rectangular self-portrait with dimensions of 24 inches by 36 inches. 
4	What is the area of the self-portrait in square **FEET**? A) 864 ft^2 B) 6 ft^2 C) 60 ft^2 D) 72 ft^2 E) Answer not given.
5	Jae glues his portrait (white rectangle) to a mat board (gray rectangle) such that a 2-inch width of mat board shows on all sides of the portrait (see drawing above). What is the area in square inches of the gray mat board showing around the portrait? A) 108 in^2 B) 1120 in^2 C) 168 in^2 D) 208 in^2 E) Answer not given.
6	Jae uses another sheet of rectangular drawing paper the same size as his self-portrait to draw a circle. What is the largest radius this circle could have? A) 12 inches B) 18 inches C) 24 inches D) 36 inches E) Answer not given

	USE THE FOLLOWING INFORMATION FOR PROBLEMS 7-9. Kyle is trying to stack cups in the shape of a triangle. With each row of cups that he stacks, the number of cups in that row decreases from the previous row by 1 so the top row will have only 1 cup.
7	If the middle row in his stack of cups has 5 cups, how many cups total are in his triangle? A) 36 B) 55 C) 45 D) 15 E) Answer not given.
8	After Kyle makes his triangle, he begins taking them down and places the cups inside of each other. A column of 10 cups has a height of 28 centimeters and a column of 7 cups has a height of 22 centimeters. How tall, in centimeters, would a column of 35 cups be? A) 110 cm B) 98 cm C) 78 cm D) 69 cm E) Answer not given.
9	If each cup can hold 6 fluid ounces of water and costs 35 cents, how many pints of water does it take to fill $42 worth of cups? A) 90 pints B) 45 pints C) 180 pints D) 270 pints E) Answer not given.
10	T-rexes always lie and Stegosauruses always tell the truth. At Jurassic park you overheard the talk of 4 dinosaurs (each either a Stegosaurus or a T-rex), who said: Dinosaur A: I am a Stegosaurus. Dinosaur B: Dinosaur A is a T-rex. Dinosaur C: Neither Dinosaur A nor Dinosaur B is a Stegosaurus. Dinosaur D: There are at least 3 Stegosauruses among the 4 of us. How many Stegosauruses did you overhear talking? A) 0 B) 1 C) 2 D) 3 E) 4

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Team Contest

1	What is the largest number of cans of paint Tealah can buy with $35? Each can of paint costs $2 plus sales tax, which is 8% of the purchase price.
2	Two opposite sides of a rectangle are 4 feet each. The area of the rectangle is 28 square feet. What is the number of feet in the perimeter of this rectangle?
3	What time will it be 48 minutes after 11:26 AM?
4	Gloria listed the multiples of 8 less than 150, starting with 8 (that is, 8, 16, and so on). How many times did Gloria write the digit "8"?
5	Three points are marked on a number line: point A at 54, point B at 94, and point C at 34. Point A is what reduced fraction of the distance from point C to point B?
6	The average age of Tom, Dick, and Harry is 32 years. When Bob joins them, the average age of the group of guys drops to 28 years. How many years old is Bob?
7	Karen takes all the diamonds from a standard deck of cards and adds them to another complete deck. She shuffles the new, enlarged deck, then draws a single card at random. As a reduced fraction, what is the probability that this card is red?
8	Put the following four values in order from smallest to largest. Your answer should consist of 4 letters in the correct order. A = the total number of days in all months whose names end in EMBER B = the number of seconds in $1\frac{3}{4}$ minutes C = the number of years in 8.9 decades D = the number of hours in $3\frac{5}{6}$ days
9	Donna adds five 3-digit counting numbers, as follows: $297+645+?70+936+4?1$. Donna writes 51?3 as her answer. The correct answer has these same 4 digits, but in a different order. (The "?" symbol in each position represents some digit that Donna can see but you cannot. The three "?" symbols do not necessarily represent the same digit.) What is the sum of the three hidden digits?
10	When four copies of a counting number are multiplied together (eg, $9\times9\times9\times9$), the product is called a perfect fourth power. What is the sum of all the different digits that can appear in the ones place of a perfect fourth power?

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Relay Contest

RELAYS - 5 minutes per relay – 4 problems per relay - 2 relays – 15% of team score

There is no talking during this event and you must always be facing forward. Person #1 will be given an answer sheet and will need to fill out the information at the top. The proctor will hand out a strip of paper to each person containing problem(s). These need to be face down on your desk until it is time for the relay to start. Person #1 will have problem #1 on his/her paper. Person #2 will have problem #1 and #2 printed on his/her paper. Person #3 will have problem #2 and #3 on his/her paper and Person #4 will have problem #3 and #4 on his/her paper. Once the relay begins, everyone may turn over their strip of paper and begin working. You may write on the strip of paper to come up with answers to the problems on your strip of paper. However, when person #1 figures out his/her problem, he/she will record ***ONLY his/her final answer*** *on the answer sheet and pass only the answer sheet back to the person #2. Person #2 has the option of changing Person #1's answer if he/she wants by crossing it out and putting a new answer. Once Person #2 records at least an answer for problem #2 on the answer sheet, he/she passes only the answer sheet behind to Person #3. This continues until person #4 puts an answer on the answer sheet and gives it to the proctor. A correct answer for problem #1, #2 and #3 is worth 1 point each. A correct answer from problem #4 is worth 2 points making each relay worth 5 points. You will see the expression* ***TNYWG*** [Proctor: write this on the board] *which means: "the number you will get". This is where you insert your teammate's answer into the new problem that you have on your paper so you can finish solving it. Once the relay begins, turn over your strip of paper and* ***make sure you have the right person number.*** *Each teammate has the option of changing any answers on the answer sheet when they have it in their possession, but once it is passed back, they will not see the answer sheet again. Remember, no talking and remain facing forward to avoid being disqualified!*

	Practice Relay	Answer
Question 1	Find the difference between 9 and 7.	2
Question 2	Evaluate: TNYWG x TNYWG x TNYWG	8
Question 3	Add 11 to TNYWG.	19
Question 4	What is the sum of the digits of TNYWG?	10
	Relay #1	
Question 1	How many nickels are equal to one quarter?	5
Question 2	What is TNYWG multiplied by thirteen?	65
Question 3	Find the sum of TNYWG and the number of hours in one 7-day week.	233
Question 4	Simplify the fraction $\frac{102}{51}$ and subtract it from TNYWG.	231
	Relay #2	
Question 1	How many inches are in two feet?	24
Question 2	What is the sum of the number of feet of 6 chickens, 2 ducks, 8 dogs, and TNYWG cows?	144
Question 3	What is the largest counting number that will divide into both 28 and TNYWG, with no remainder in either case?	4
Question 4	Divide TNYWG by one-third, then add $3(11-2)$.	39

"Math is Cool" Championships – 1010-11

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COLLEGE KNOWLEDGE BOWL ROUND #1 - SET 1

#	Problem	Answer
1	What is the product of 18 and 126?	2268
2	Johnny Appleseed picks 34 apples. He eats 3 apples and uses 5 more apples for applesauce. If he gives away half of his remaining apples to his friends, how many apples does Johnny have left?	13 [apples]
3	How many vertices does a cube have?	8 [vertices]
4	Susan ran four miles a day for one full week. How many total miles did Susan run that week?	28 [miles]
5	There are eighteen 5^{th} graders at "Math is Cool" Academy. Twelve of them are taking calculus and twelve are taking band. If every 5^{th} grader is taking either calculus or band or both, how many are taking both calculus and band?	6 [5^{th} graders]
6	Rachel needs one and one-half pounds of apples to make apple cider. She only has one point one two pounds of apples. How many more pounds of apples does she need? Express your answer as a decimal.	0.38 or .38 [pounds] or point three eight
7	If 6 people can sit at one table, how many tables are needed to seat 100 people?	17 [tables]
8	Ryan's family has 3 dogs, Janet's family has 8 fish and Alison's family has 4 cats. What is the mean number of pets per family?	5 [pets]
9	Jason wants to repaint all four outside walls of a windowless rectangular storage shed, including the door. If the shed has a length of 6 feet, a width of 6 feet and a height of 10 feet, how many square feet must Jason paint?	240 [square feet]
10	What is one-fifth of one-fourth of one-third of one-half of 360?	3

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COLLEGE KNOWLEDGE BOWL ROUND #2 - SET 2

#	Problem	Answer
1	What is the remainder when you divide 2,468 by 6?	2
2	Chris is taller than Brandon but shorter than Brent. Who is taller, Brent or Brandon?	Brent
3	Johnny realizes that 50% of all the apples he picks have worms in them. How many apples would Johnny expect to have worms if he picks 60 apples?	30 [apples]
4	What is the fraction of the days of the week starting with the letter S?	2/7
5	Jasmine bought 3 meters of ribbon. She cut the ribbon crosswise into strips 50 centimeters long. How many such strips will she have?	6 [strips]
6	How many cups of water are needed to fill a two-gallon jug?	32 [cups]
7	There are only pigs and chickens in a field. The ratio of pigs to the total number of animals in the field is 3 to 7. What is the ratio of chickens to pigs in the field?	4 to 3 or 4/3
8	Justin was chasing butterflies. He caught 4 butterflies total, which was one-third of all those he was chasing. How many butterflies was Justin chasing?	12 [butterflies]
9	If I have 6 pennies, 2 quarters, 3 nickels and 1 dime in my pocket, how many cents do I have?	81 [cents]
10	What is the area in square inches of a trapezoid with a height of 5 inches and bases of 4 inches and 8 inches?	30 [square inches]

"Math is Cool" Championships – 1010-11

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COLLEGE KNOWLEDGE BOWL ROUND #3 - SET 3

#	Problem	Answer
1	What is the product of the number of days in a week and the number of hours in a day?	168
2	The battle of wits at the arena between "Triangle Man" and "Universe Man" was sold out. There are 37 sections at the arena, with 397 people in each section. What is the total number of people at the arena?	14,689 [people]
3	Melissa can trade 3 cats for 2 dogs and can trade 6 dogs for a pet dinosaur. How many cats must Melissa have to trade for a pet dinosaur?	9 [cats]
4	A town with a population of 15,000 people doubles its population every 18 years. How many people will be in the town in 36 years?	60,000 [people]
5	Convert fourteen divided by five to a mixed number.	$2\frac{4}{5}$
6	What is the sum of the median and the mode of the following set of values? 5, 8, 3, 5, 6, 2, 5, 5 , and 500	10
7	Chris can buy a 5-pound bag of candy for $7, a 6-pound bag of candy for $9, or an 8-pound bag of candy for $10.00. What is the price per pound, in dollars, of the cheapest candy?	[$] 1.25
8	Sampson eats 4 apples on Tuesday, 5 apples on Wednesday, 6 apples on Thursday and 5 apples on Friday. On average, how many apples a day did Sampson eat during these days?	5 [apples]
9	What is the product of 123 and 456?	56,088
10	Lebron has saved up $40 to buy rings. But first, he uses this money to buy two t-shirts that each cost $9.50. How many rings can Lebron buy with his leftover money if each ring costs $3.50?	6 [rings]

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COLLEGE KNOWLEDGE BOWL ROUND #4 - SET 4

#	Problem	Answer
1	What is the number of units in the perimeter of a triangle with sides of 3, 6, and 9 units?	18 [units]
2	Rita traveled three hundred eight miles and used 14 gallons of gas. How many miles per gallon did Rita get on her trip?	22 [miles per gallon]
3	What is the largest counting number that can divide into both 12 and 18 with no remainder in either case?	6
4	Johnny can pick a total of 32 apples an hour. How many apples can he pick in a standard 40-hour work week?	1280 [apples]
5	Beth wants to share her 67 apples equally among herself and 7 friends. How many apples will be left over?	3 [apples]
6	My number can be divided by 12 and also by 8 with no remainder in either case. How many counting numbers less than 100 could I be thinking of?	4 [numbers]
7	Each box can hold 8 apples. How many boxes are needed to hold 72 apples?	9 [boxes]
8	How many prime numbers are between 21 and 33 inclusive?	3
9	Sophia bought a dragon for $1,700. The dragon was on sale for 15% off the original price. What was the original price, in dollars?	[$] 2,000
10	Allison runs a mile each week. Every week she runs the mile 8 seconds faster than she did the week before. In her ninth week, she takes 8 minutes and 25 seconds. How fast did she run the mile, in minutes and seconds, on her first week?	9 minutes and 29 seconds

"Math is Cool" Championships – 1010-11

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5th Grade – March 23, 2012

COLLEGE KNOWLEDGE BOWL ROUND #5 - SET 5

#	Problem	Answer
1	What is the smallest prime number larger than fourteen?	17
2	What is the mean of the following set of data? 7, 12, 6, 3	7
3	What is the sum of zero point five six and one point four seven? Give your answer as a decimal	2.03
4	If Johnny can sell his apples for 50 cents each, how much, in dollars, can Johnny earn for selling 24 apples?	[$]12
5	How many different counting numbers will divide into 12 with no remainder?	6 [numbers]
6	How many inches are in 4 feet?	48 [inches]
7	How many diagonals can be drawn inside a square?	2 [diagonals]
8	Emily and Martha ordered one pizza. If Emily ate one-third of the pizza and Martha ate one-fourth of the pizza, what fraction of the pizza was left over?	5/12
9	Sampson must put a fence around two different rectangular gardens. One garden measures 8 feet by 7 feet, while the other garden measures 10 feet by 4 feet. How many feet of fencing does Sampson need to fence both gardens entirely?	58 [feet]
10	Pete the pitcher throws an average of 4 pitches to each batter. An average of 75% of all Pete's pitches are strikes. On average, how many strikes does Pete throw if he faces 16 batters?	48 [strikes]

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COLLEGE KNOWLEDGE BOWL ROUND #6 - SET 6

#	Problem	Answer
1	How many feet are in five and one-third yards?	16 [feet]
2	Kym divided a number by 5 and got a quotient of 63 and a remainder of 2. What is the number?	317
3	Paula's Perfect Pizzas cost $6 each. Paula's also has a $4 delivery charge. How much would it cost, in dollars, to buy 4 pizzas and have them delivered?	[$] 28
4	What is the sum of one plus two plus three plus..., all the way through eight?	36
5	Bugs Bunny has four bundles of carrots. If each bundle has 15 carrots and Bugs Bunny eats 3 carrots a day, how many days will it take Bugs Bunny to eat half of his carrots?	10 [days]
6	If it takes two clowns to blow up 6 balloons, how many clowns would it take to blow up 30 balloons?	10 [clowns]
7	A twelve-story building has 624 offices. On average, how many offices are on each floor?	52 [offices]
8	What percent of three hundred is equal to one-third of nine hundred?	100 [%]
9	When my number is divided by your number, the quotient is 13, and there is no remainder. When my number is added to your number, the sum is 70. What is your number?	5
10	When 57 is multiplied by Annie's favorite number, the product is a counting number larger than 1500 but smaller than 2000. What is Annie's favorite number if all its digits are the same?	33

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5th Grade – March 23, 2012

COLLEGE KNOWLEDGE BOWL ROUND - EXTRA

#	Problem	Answer
1	How many prime numbers are there with only one digit?	4 [prime numbers]
2	Let: A = three divided by four, B = three divided by five, C =four divided by three and D = six divided by eight. Which two letters have the same value?	A and D [either order]
3	What is the product of zero point forty five and twenty?	9

Final Score:

KEY

First Score

(out of 8)

"Math is Cool" Championships – 2011-12

Sponsored by:

5th Grade – March 23, 2012

Name_____Team #_____ Room #_____

School Name _____ Proctor Name_____

Mental Math Contest

MENTAL MATH - 30 seconds per question – 25% of team score

When it is time to begin, the proctor will read the first question twice. You may not do any writing or talking while arriving at a solution. Once you have a solution, record it on the sheet in front of you. ***You may not change or cross out answers once you have written an answer down. If there are eraser marks, write-overs, or crossed-out answers, they will be marked wrong.*** *Once all students have laid their pencils on the desk, another question will be asked. If a student doesn't lay his/her pencil down, the maximum wait time is 30 seconds after completion of the second reading of the question before another question is asked. You may continue to work on a problem while the next question is being read. The value of each question is a one or zero. Each student will be asked the same eight questions. Individual scores used to determine individual placing will be determined by the sum of the Mental Math score and the Individual Test score for each individual. In addition, the top three Mental Math scores from one team will be totaled and doubled and will contribute to 25% of the team score.*

DO NOT WRITE IN SHADED REGIONS

Answer		1 or 0	1 or 0
1	9 [pennies]		
2	4		
3	40[in^2]		
4	63		
5	24 [in]		
6	7/15		
7	110 [ounces]		
8	8 [numbers]		

"Math is Cool" Championships – 2011-12

5th Grade – March 23, 2012

School Name_____Team #_____

Proctor Name_____Room #_____

Final Score:

KEY

First Score

(out of 20)

TEAM MULTIPLE CHOICE - 15 minutes – 10 problems – 20% of team score

This test is the only test where you will be penalized for incorrect responses. You will receive 2 points for a correct letter response, 0 points for leaving it blank and -1 point for an incorrect response. When you are prompted to begin, tear off the colored sheet, pass out a copy of the test to each team member, and begin testing. Since this is a multiple choice test, ONLY a letter response should be listed as an answer on the answer sheet.

DO NOT WRITE IN SHADED REGIONS

	Answer	-1, 0 or 2	-1, 0 or 2
1	B		
2	A		
3	B		
4	B		
5	E [256 sq. inches]		
6	A		
7	C		
8	C		
9	B		
10	B		

"Math is Cool" Championships – 2011-12

5th Grade – March 23, 2012

School Name_____Team #_____

Proctor Name_____Room #_____

Final Score:
KEY

First Score
(out of 10)

TEAM TEST - 15 minutes – 10 problems – 30% of team score

When you are prompted to begin, tear off the colored sheet and give a copy of the test to each of your team members and begin testing. Each problem is scored as ***1 or 0****. Record all answers on colored answer sheet.*

DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1	16 [cans of paint]		
2	22 [feet]		
3	12:14 PM		
4	6 [times]		
5	1/3		
6	16 [years]		
7	3/5		
8	CADB [in that order]		
9	18		
10	12		

"Math is Cool" Championships -- 2011-12

KEY

5th Grade – March 23, 2012

School:_____Team #_____

Proctor: _____ Room #_____

PRACTICE RELAY

Answer for person # 1	Answer for person # 2	Answer for person # 3	Answer for person # 4
2	**8**	**19**	**10**
1 or 0	1 or 0	1 or 0	2 or 0

RELAY # 1

Answer for person # 1	Answer for person # 2	Answer for person # 3	Answer for person # 4
5	**65**	**233**	**231**
1 or 0	1 or 0	1 or 0	2 or 0

RELAY # 2

Answer for person # 1	Answer for person # 2	Answer for person # 3	Answer for person # 4
24	**144**	**4**	**39**
1 or 0	1 or 0	1 or 0	2 or 0

Final Score:

First Score
(out of 8)

"Math is Cool" Championships – 2011-12

Sponsored by:

5th Grade – March 23, 2012

Name_____Team #_____ Room #_____

School Name _____ Proctor Name_____

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	Answer	1 or 0	1 or 0
1			
2			
3			
4			
5			
6			
7			
8			

"Math is Cool" Championships – 2011-12

5th Grade – March 23, 2012

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Proctor Name_____Room #_____

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(out of 20)

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3			
4			
5			
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7			
8			
9			
10			

"Math is Cool" Championships – 2011-12

5th Grade – March 23, 2012

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3			
4			
5			
6			
7			
8			
9			
10			