"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010
Individual Contest

GENERAL INSTRUCTIONS applying to all tests:

- *Good sportsmanship is expected throughout the competition by all involved. Bad sportsmanship may result in disqualification.*
- *Calculators or any other aids may not be used on any portion of this contest.*
- *Unless stated otherwise:*
  - *For problems dealing with money, a decimal answer should be given.*
  - *Express all rational, non-integer answers as reduced common fractions.*
- *For fifth and sixth grade, all fractions and ratios must be reduced.*
- *Counting or natural numbers refer to the numbers 1,2,3,4 and so on and do NOT include 0.*
- *Units are not necessary unless it is a problem that deals with time and, in that case, am or pm is needed. 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 filled out at the top of the sheet.*
- *Tests will be scored as a 0 if answers are not recorded correctly on the answer sheets.*
- *Blank answer sheets and answer sheets with no name will also be scored as a 0.*

INDIVIDUAL TEST - *35 minutes*

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. Each problem is scored as a 1 or 0. Record your answers on the score sheet. No talking during the test. You will be given a 5 minute warning.

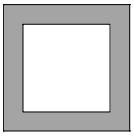
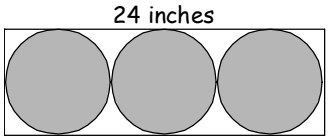
"Math is Cool" Masters – 2009-10

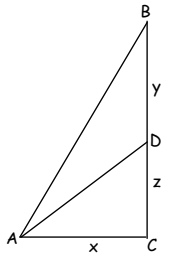
5th Grade – May 22, 2010

Individual Contest

Record all answers on the colored cover sheet.

1	What is the product of the digits of the year 2010?
2	A line of symmetry divides a figure into two equal halves, each half the reflection of the other. How many lines of symmetry does an equilateral triangle have?
3	When 7 is added to 18, the sum is how much less than 30?
4	Karen has a jar with 2 red marbles, 4 blue marbles, and 5 yellow marbles. She takes out one marble at random. As a fraction, what is the probability that this marble is yellow?
5	What time will it be 49 minutes after 6:28 PM?
6	Two congruent equilateral triangles are put together exactly side to side without overlap. Give the letter or letters of all the terms below that do not describe the resulting figure. (A) quadrilateral, (B) polygon, (C) rectangle, (D) parallelogram, E) rhombus
7	Evaluate: $100 + 200 + 300 + 500 + 600$.
8	On the planet Threa, the year is divided into 12 months, each with exactly 31 days. How many days are in a year on the planet Threa?
9	If three pencils cost 51¢ in all and each pencil costs the same amount, how many cents would two pencils cost?
10	The average (mean) of 10, X, 2X, 18, and 9 is 11. What is X?
11	If twice my number is equal to half my number, then what is my number?
12	Each chocolate chip cookie costs 75¢ and each vanilla cookie costs 50¢. Milly buys 3 chocolate chip cookies and 5 vanilla cookies and pays with a $10 bill. How much change (in dollars) should she get back?
13	Find the value of $3.09 + 0.034 - 1.26$, and give your answer as a decimal.
14	Rita has a piece of red rope candy that is 72 cm long. She marks 8 different places on the rope, then cuts through the rope at each of these places. On average, what is the length (in cm) of each resulting piece?
15	How many multiples of 5 are between 29 and 72?
16	Adam has 10 coins which have a total value of 78 cents. How many dimes could Adam have? If there is more than one possible answer, give all of them.

17	A unit fraction is a fraction with 1 in the numerator and a counting number in the denominator, such as $\frac{1}{2}$ or $\frac{1}{25}$. Alice is thinking of a unit fraction, $\frac{1}{A}$, that is less than $\frac{2}{5}$. Bob is thinking of a unit fraction, $\frac{1}{B}$, that is greater than $\frac{1}{10}$. What is the sum of the smallest possible value of A and the largest possible value of B?
18	Four rectangular wooden pieces, each measuring 1 cm wide by 9 cm long, are arranged with no overlap to form a square picture frame, as shown (not to scale). What is the area, in square centimeters, of the largest picture that can fit completely within this frame? 
19	Two of the angles of a certain triangle have the same degree measure, which is 15°. What is the degree measure of the third angle of this triangle?
20	Find the value of $4(3+x)+2(7-x)$ if $x=8$.
21	Water is trickling from a faucet at a rate of 2 mL per minute. If Betty holds an empty glass under the faucet, how many mL of water will she collect in 750 seconds?
22	At Bert's Burger Barn, you can choose from white, whole wheat, or sesame seed buns, and from beef, chicken, or veggie patties. If a burger consists of one type of bun and either one patty or two patties (either the same type or different types), how many different burgers can you choose? (The order in which two patties are placed on the bun doesn't matter.)
23	Patrick and Patsy are jogging in the same direction along the same straight track. Patrick has a head start of 36 miles and jogs at 4 miles per hour. Patsy jogs at 7 miles per hour. Assuming they maintain these speeds without stopping, how many hours will it take Patsy to catch up with Patrick?
24	In the figure at right, the three circles are the same size, and each touches its neighboring circle at a single point. The rectangle encloses them exactly. If the length of the rectangle is 24 inches as shown, find the number of square inches in the area of the rectangle. 
25	In a "snow to shore" relay race, a canoeist covered her 12-mile portion of the route at an average speed of 5 miles per hour, and then passed the baton to a bicyclist who rode his 18 miles at 15 miles per hour. How many hours did it take them to cover these 30 miles? If your answer is not a whole number of hours, express it as a mixed number.
26	A square has area S^2 square inches. Each side of the square is lengthened by 4 inches. The perimeter of the new square is $A \times S + B$ inches. What is the sum of $A+B$ that will be true for all positive values of S?
27	When you write the digits of a counting number in reverse order, you get a new number that is the reversal of the original number. What is the greatest common factor of 2010 and its reversal?

28	In the figure at right (not drawn to scale), $\frac{Y}{z}=\frac{1}{2}$. The area of triangle ABD is what fraction of the area of triangle ABC? 
29	In 1960, Air Force Captain Joe Kittinger jumped from a balloon at 102,800 feet high to set the world's record for a high-altitude parachute jump. To the nearest whole mile, how many miles up was Capt. Kittinger when he jumped?
30	Lou bought five pieces of fruit. Each piece of fruit was either an apple, weighing $\frac{1}{2}$ pound, or an orange, weighing $\frac{3}{4}$ pound. The total weight of the fruit was a whole number of pounds. If apples cost 80¢ a pound and oranges cost $1.10 a pound, how much did Lou's fruit cost, as a decimal number of dollars?

Challenge Questions

31	What is my number if 17 more than my number is the same as 71 minus twice my number?
32	Put the following three values in order of increasing size (smallest first). Your answer should consist of 3 letters in the correct order. $A=\frac{1}{7}+\frac{1}{9}$ $B=\frac{1}{4}$ $C=\frac{1}{8}+\frac{1}{6}$
33	Two different counting numbers have the same remainder when divided by 7. (This remainder is not zero.) One of the numbers is a multiple of 6, and both numbers are less than 50. What is the largest possible sum of the two numbers?
34	Harshini and Miya are making cookies from a recipe that calls for mixing 2 cups of butter with $1\frac{1}{2}$ cups each of flour and sugar. However, they mistakenly read the quantities of flour and sugar as $\frac{11}{2}$ cups each, so this is what they mixed up. How many additional cups of butter will they need to add to keep the proportions the same as in the original recipe? If your answer is not a whole number, express it as a mixed number.
35	Stacey has 1000 sticks. She groups them into bundles of 6, and when she gets 6 such bundles, she ties them together to form a bindle. When she gets 6 bindles, she ties them together to form a bandle. When she has finished, Stacey has A bandles, I bindles that are not in bandles, U bundles that are not in bindles, and S sticks that are not in bundles. Write these four values in order (AIUS).

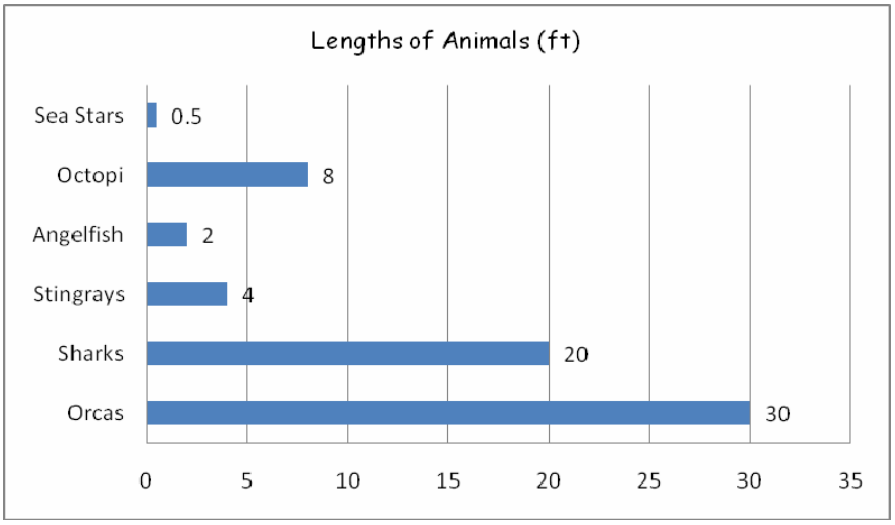
36	A token exchange machine takes an exact number of tokens of one color and returns an exact number of tokens of another color. Five purple tokens can be exchanged for 3 green tokens, or 4 purple tokens can be exchanged for 3 yellow tokens. Five green tokens can be exchanged for 2 red tokens. In each case, the reverse exchange is also possible (eg, 3 yellow tokens can be exchanged for 4 purple tokens). If I start with 9 red tokens and get as many yellow tokens as possible, how many tokens in all will I have when I finish?
37	A small parking lot has spaces for 6 cars in a row, as shown.  Three of the spaces, chosen at random, have cars parked in them. As a reduced (simplified) fraction, find the probability that the empty spaces are all next to each other.
38	Sarah had a set of 100 square tiles, all the same size. She has now lost N of those tiles. It is now no longer possible for Sarah to lay out a set of squares made from her tiles so that all squares are different sizes and no tiles are left over. What is the smallest possible value of N?
39	When a certain counting number is divided by 9, the sum of the remainder and the quotient is 13. What is the smallest possible value of this number? (Remember that the divisor must be larger than the remainder.)
40	Jan built a cube from unit cubes (each 1 by 1 by 1 unit). Ken took this cube apart, and used the unit cubes to build a rectangular solid that was the same height as Jan's cube but 2 units greater in width and 2 units less in length. Ken had 24 unit cubes left over. How many unit cubes did Ken use to build his figure?

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010
Team Multiple Choice Contest

An earthquake has struck the Monterey Bay Aquarium and some of the facilities have been damaged. Before the earthquake, the Aquarium collected the following data on all the animals in its Masters of the Sea exhibit. "Wake" time is the time at which the animals become active; "sleep" time is the time they become inactive. Length of the animals is measured as their longest dimension.

	Number	Average Weight (lb)	"Wake" Time (AM)	"Sleep" Time (PM)	Swimming Speed (ft/sec)
Orcas	3	500	5:00	7:30	12
Sharks	20	200	4:30	11:30	25
Stingrays	35	30	11:00	10:00	8
Angelfish	50	20	7:00	8:30	15
Octopi	100	15	2:30	2:30	10
Sea Stars	300	1	3:00	5:00	0.05



Questions on next page…

1	Octopi are how many times as long as sea stars? A) 8 B) 80% C) 16 D) 4 E) Answer Not Given
2	At 6:20 AM on a day before the earthquake occurred, how many of the animals in the Masters of the Sea exhibit were active? A) 458 B) 408 C) 508 D) 423 E) Answer Not Given
3	After the earthquake, a fifth of the stingrays from the Masters of the Sea exhibit escaped into the sea through a hole in their enclosure. How many total pounds would the escaped stingrays be expected to weigh? A) 150 B) 1150 C) 210 D) 135 E) Answer Not Given
4	Sharks swim X times as fast as octopi and Y times as fast as angelfish. What is X minus Y? A) 5 B) $\frac{25}{6}$ C) 1.5 D) $\frac{5}{6}$ E) Answer Not Given
5	An orca is swimming laps back and forth along a 600-foot-long tank. (One lap is defined as swimming the length of the tank twice.) If the orca began swimming when it woke up in the morning and has now swum 126 laps without stopping, what time is it now? A) 7:45 AM B) 6:45 AM C) 5:52.5 AM D) 9:15 AM E) Answer Not Given
6	The shark tank was damaged by the quake, and some of the sharks were moved temporarily into the angelfish tank. Two days after the sharks were moved, a marine biologist discovered that only 22 angelfish remained in their tank. If each shark eats 7 angelfish per day, how many sharks were moved into the angelfish tank? (No angelfish escaped or died from other causes.) A) 11 B) 2 C) 3 D) 4 E) Answer Not Given
7	Some of the animals from the Masters of the Sea exhibit were lined up end to end (in the direction of their longest dimension). Their total length was exactly 500 feet. If no more than 15 individuals of any animal type were in the line, what is the smallest number of animals there could have been in the line? A) 33 B) 32 C) 25 D) 19 E) Answer Not Given
8	A shark (S), an angelfish (A), and a stingray (R) are arranged in a line in a large tank, in this order: S→→A→→R (diagram not to scale). The starting distance between S and A is 100 feet. If all three start swimming at the same time in the direction of the arrows, the shark will catch up to the angelfish at the same time as the angelfish catches up to the ray. What was the starting distance in feet between A and R? A) 70 B) 16 C) 60 D) 100 E) Answer Not Given
9	After the quake, all of the sea stars, <u>remaining</u> angelfish, and <u>remaining</u> stingrays from the Masters of the Sea exhibit were moved to a temporary home at another aquarium so that repairs could be made to their tanks. (NOTE: See problem 3 and problem 6.) All these animals were combined into a single container to transport them. If an animal is chosen at random from this container, what is the probability that it is not a stingray? A) 23/25 B) 10/11 C) 21/23 D) 28/350 E) Answer Not Given

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010
Team Contest

1	What is the smallest whole number that could be added to 973 to produce a sum greater than 2010?
2	Wendy lost a dollar but then found an amount equal to half the amount of money she had before losing her dollar. She now has $7.25. How much money (in dollars) did Wendy have originally?
3	Point C on a number line is halfway between point A and point B. Point D is halfway between point B and point C. Point D is 54 units from point A. How many units is point C from point B?
4	Suman drives 48 miles in 2 hours. At this speed, how many miles would Suman drive in 3 hours?
5	If the table at right continues with the pattern shown, what letter will head the column in which the number 2010 will appear?
6	Amazingly, 3-toed sloths have 3 toes per foot, and 2-toed sloths have 2 toes per foot. Each sloth has four feet. A group of 3-toed sloths and 2-toed sloths has 76 toes altogether. How many 3-toed sloths could be in the group? Give all possible answers.
7	A rectangle is cut in half to form 2 smaller rectangles. The perimeter of each of the smaller rectangles is 12 inches, and all of their sides are a whole number of inches. Find the sum of all numbers that could possibly be the perimeter (in inches) of the original rectangle.
8	Dotty puts a decimal point in each of the following two addends (without putting in extra zeros) such that S is greater than 10 but less than 100. Find the sum of all possible values of S that could result. $984 + 695 = S$
9	Three of the following values are equal. Which one is different? $\frac{6}{8}$ $\frac{51}{68}$ $\frac{25}{30}$ 0.75
10	I am thinking of a 3-digit whole number with all its digits different. Exactly one of its digits is in the number of inches in a yard. Exactly one of its digits is in the number of hours in 2/3 of a day. Exactly one of its digits is in the number of years in 25 decades. Exactly one of its digits is in the number of ounces in 4 pounds. What is the smallest my number could be?

A	B	C	D	E	F
	1	2	3	4	5
6	7	8			

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010

Relay Contest

RELAYS - 5 minutes per relay

	Relay #1	Answer
Person 1	There is a troop of 20 monkeys in the forest. Eight of these monkeys like bananas, five like mangos, and two like both (they love banana-mango smoothies). How many monkeys like neither bananas nor mangos?	9 [monkeys]
Person 2	A rectangle has perimeter 18 units and the length is twice the width. Find the number of units in the length and subtract it from TNYWG.	3 [units]
Person 3	A pie is cut in half and each of these pieces is quartered. If each resulting piece is finally divided into TNYWG equal slices, what simplified fraction of the original pie does each final slice contain?	1/24
Person 4	If five bings equal one bang and 3 bangs equal TNYWG bongs, how many bings are equal to one bong?	360 [bings]
	Relay #2	Answer
Person 1	Vishnu writes Math Is Cool problems at a constant (unchanging) rate. If he writes 4 problems in 10 minutes, how many problems would he write in 95 minutes?	38 [problems]
Person 2	Suman plays a game with his calculator where he inputs a two-digit number, reverses the digits, subtracts 25, divides by 2, finds the sum of the digits of this result, and finally subtracts 1. If his original number is TNYWG, what number does he end up with?	10
Person 3	Alex has TNYWG math problems in a homework assignment. Alex has an 80% chance of missing each assigned problem the first time he works it, but a 50% chance of correcting a mistaken answer when he checks his work. He never changes a correct answer when he checks it. After Alex checks and corrects his work, how many problems from this assignment can he expect to get wrong?	4 [problems]
Person 4	There are 20 lockers at Brahmagupta High School, numbered 1 through 20. All the lockers are closed. Ramanujan opens every locker whose number is a multiple of two, three, or five. He then closes all lockers whose numbers are multiples of TNYWG. After this process, how many lockers are closed?	11 [lockers]

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010

Final Score: KEY

School Name_____Team #_____

Proctor Name_____Room #_____ Division: ____

Mental Math Contest

MENTAL MATH - 30 seconds per question

PERSON 1 NAME:		**1 or 0**
1.1	Find the sum of the numerator and denominator of the reduced fraction that is equal to ten over fifteen.	5
1.2	In how many orders can I arrange a penny, a nickel, and a dime in a row?	6 [orders or ways]
1.3	I go to a pet store with twenty-two dollars. Turtles cost four dollars and fifty cents each. What is the maximum number of whole turtles I can buy?	4 [turtles]
1.4	The sum of two prime numbers is twelve. What is the smaller of the two prime numbers?	5
PERSON 2 NAME:		
2.1	All my cooking pots are the same size. If one pot can hold two quarts of soup, how many pots will I need to hold fourteen quarts of soup?	7 [pots]
2.2	Find the total number of ounces in two pounds and nine ounces.	41 [ounces]
2.3	One acute angle of a right triangle measures seventy-four degrees. Find the degree measure of the smallest angle of this triangle.	16 [° or degrees]
2.4	What is three-fourths of six hundred?	450
PERSON 3 NAME:		
3.1	The area of a rectangle is twelve square units. If both length and width are <u>EVEN</u> whole numbers, what is the number of units in the longest side of this rectangle?	6
3.2	Find the sum of the five smallest counting numbers that are all multiples of five.	75
3.3	What is the units or one's place digit of the product of seventy-nine times eighty-four?	6
3.4	The sum of two consecutive whole numbers is one hundred twenty-three. What is the smaller of these two numbers?	61
PERSON 4 NAME:		
4.1	How many sides of an equilateral triangle are the same length?	3 [sides]
4.2	The product of seven counting numbers is eighteen. What is the largest possible sum of these seven numbers?	24
4.3	What fraction of the months of a calendar year, have thirty-one days?	7/12
4.4	On a certain day last winter, the temperature was twenty degrees at 8 AM. When I checked at 10 AM, the temperature had fallen by thirty degrees. At noon, the temperature was fifteen degrees higher than at 10 AM. What was the number of degrees in the temperature at noon that day?	5 [degrees]

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010

Set 1A

COLLEGE KNOWLEDGE BOWL ROUND #1

#	Problem	Answer
1	I have X different books, which can be arranged in a row in six ways. What is X?	3
2	Holly is making ice cream. She uses five cups of cream and three cups of fruit in every batch of ice cream. How many cups of cream will she need if she uses twenty-one cups of fruit?	35 [cups]
3	Find the product of ninety-eight times one hundred two.	9996
4	A virus is attacking the number two thousand ten. It doubles every digit unless the result of doubling would be a two-digit number. The virus keeps attacking the number produced until the result does not change. What number is the final result of the virus attack?	8080
5	How many ways are there to make exactly fifteen cents using only nickels or pennies or both?	4 [ways]
6	Every day at the beach, Sandy collects five times as many clam shells as sand dollars. By the end of her vacation, she has collected one hundred five clam shells. How many sand dollars has she collected?	21 [sand dollars]
7	Four different points are marked on the circumference of a circle. How many line segments would it take to connect each of those points to every other marked point?	6 [line segments]
	Extra Problem – Only if Needed	
8	How many more sides are there in a decagon than in a heptagon?	3 [sides]

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010

Set 2A

COLLEGE KNOWLEDGE BOWL ROUND #2

#	Problem	Answer
1	Patty randomly selects a prime number less than twenty. As a simplified fraction, what is the probability that this prime number has two digits?	1/2
2	Tom draws a square with side length eight inches. Suzy draws a square with more than twice the area of Tom's square. What is the smallest possible whole number of inches in the side length of Suzy's square?	12 [inches]
3	How many years are in a century?	100 [years]
4	In a haunted mansion with two levels, there are ten rooms at every level and three windows in every room. If there are two drapes per window, how many drapes are there in the haunted mansion?	120 [drapes]
5	One angle of a triangle measures one hundred degrees. One of the remaining two angles is three times the other. What is the degree measure of the smallest angle of this triangle?	20 [degrees]
6	How many more INCHES are there in eleven FEET than in three YARDS?	24 [inches]
7	Nina eats three chocolates every hour and Evan eats five chocolates per hour. In eight hours, how many more chocolates would Evan eat than Nina?	16 [chocolates]
	Extra Problem – Only if Needed	
8	What is the sum of the digits of the product of ten times one hundred?	1

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010

Set 3A

COLLEGE KNOWLEDGE BOWL ROUND #3

#	Problem	Answer
1	Find the sum of all the counting numbers four through ten.	49
2	Andy, Billy, and Carrie have an average of seven dollars each. Andy and Carrie have an average of nine dollars each. How many dollars does Billy have?	3 [dollars]
3	If yesterday was Wednesday, what day will it be five days after the day after tomorrow?	Thursday
4	Rats have four legs, chickens have two legs, cockroaches have six legs, and spiders have eight legs each. There are seven rats, ten chickens, eight cockroaches, and five spiders in a pen. How many legs are there in the pen?	136 [legs]
5	What is the fourth number in the addition pattern whose first three numbers are five, eleven, and seventeen?	23
6	The decimal number zero point three five, or thirty-five hundredths, is the sum of one-tenth and what other simplified fraction?	1/4
7	The Mariners beat the Royals by three runs. If the Royals scored more than half the number of runs that the Mariners did, what was the smallest possible total of runs scored in the game?	11 [runs]
	Extra Problem – Only if Needed	
8	The sum of the lengths of two legs of a certain right triangle is fifteen units, and the difference between the two legs is three units. What is the number of square units in the area of the right triangle?	27 [square units]

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010

Set 1B

COLLEGE KNOWLEDGE BOWL ROUND #1

#	Problem	Answer
1	What is the sum of the two smallest prime numbers?	5
2	In practicing free-throws, Terry got exactly ninety-five percent of her shots in the basket. If she missed one shot, how many shots went in the basket?	19 [shots]
3	The area of a rectangle is fifty-six square units and the length of one side is eight units. What is the number of units in the perimeter of the rectangle?	30 [units]
4	In a certain number sequence, each number after the first two is the sum of the previous two numbers. The first number is three and the second number is four. What is the fourth number of this sequence?	11
5	What is the average or mean of seven, twelve, and five?	8
6	Mary has some red marbles and some blue marbles in a jar. She has at least two of each color. If she takes one marble from the jar at random, the probability that it will be red is one-third. What is the smallest number of marbles there could be in the jar?	6 [marbles]
7	What is the product of twenty-five multiplied by eighty-one thousand, six hundred twenty-four?	2,040,600 [2 million, 40 thousand 6 hundred]
	Extra Problem – Only if Needed	
8	What is the degree measure of the fourth angle of a quadrilateral if the sum of the three other angles is two hundred sixty-five degrees?	95 [degrees]

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010

Set 2B

COLLEGE KNOWLEDGE BOWL ROUND #2

#	Problem	Answer
1	The wool from two llamas can make seven scarves. To make forty-two scarves, how many llamas do I need to collect wool from?	12 [llamas]
2	Jane bakes the same number of cookies each week. In two weeks, Jane has baked one hundred eighty-two cookies. How many cookies did she bake per week?	91 [cookies]
3	Biff sleeps one-fourth of the day and Eho sleeps five and eight-tenths hours a day. How many minutes longer per day does Biff sleep than Eho?	12 [min]
4	How many more sides does a pentagon have than a quadrilateral?	1 [side]
5	What is the total number of paws, ears, and tails on three dogs and four cats if every animal has the usual number of each?	49
6	Points A, B, and C lie on the number line in that order. If it is ten units from A to B, and twenty-two units from A to C, how many units is it from B to C?	12 [units]
7	What is the largest counting number that will divide into both forty-five and fifty-four with no remainder in either case?	9
	Extra Problem – Only if Needed	
8	What is the hundreds digit of the product of forty-eight and ninety-four?	5

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010

Set 3B

COLLEGE KNOWLEDGE BOWL ROUND #3

#	Problem	Answer
1	The quotient of two hundred eighty-eight divided by four is equal to the product of eight and what number?	9
2	My heart beats sixty-eight times per minute. How many times will my heart beat in five minutes?	340 [times]
3	A snail travels two point four INCHES per hour. At this rate, how many hours will it take the snail to travel a distance that is two FEET less than two YARDS? If your answer is not a whole number, give it as a decimal.	20 [hours]
4	Square A, which has a perimeter of twenty units, is sixteen square units greater in area than Square B. What is the number of units in the perimeter of Square B?	12 [units]
5	Find the sum of two thousand ten plus half of two thousand ten plus one-third of two thousand ten.	3685
6	The first day of my vacation this year will be June second and the last day of my vacation will be June twelfth. How many days long will my vacation be?	11 [days]
7	Half the students on a certain committee were fifth-graders. The rest of the committee was made up of third-graders and fourth-graders, in equal numbers. If there were three third-graders on the committee, how many students in all were on the committee?	12 [students]
	Extra Problem – Only if Needed	
8	Subtract the sum of the first five EVEN counting numbers from the sum of the first six ODD counting numbers.	6

"Math is Cool" Masters – 2009-10

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Final Score:
KEY

First Score

School Name_____Team #_____

Proctor Name_____Room #_____

STUDENT NAME_____Division: _____

Individual Contest – Score Sheet

DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1	0		
2	3 [lines]		
3	5		
4	5/11		
5	7:17 PM		
6	C [rectangle]		
7	1700		
8	372 [days]		
9	34 [¢]		
10	6		
11	0		
12	[$] 5.25		
13	1.864		
14	8 [cm]		
15	9 [multiples]		
16	0, 4 [dimes] [either order]		
17	12		
18	64 [cm^2]		
19	150 [°]		
20	42		

	Answer	1 or 0	1 or 0
21	25 [mL]		
22	27 [burgers]		
23	12 [hours]		
24	192 [in^2]		
25	$3\frac{3}{5}$ [hr]		
26	20		
27	6		
28	1/3		
29	19 [miles]		
30	[$] 2.85		
31	18		
32	*BAC*		
33	89		
34	$5\frac{1}{3}$ [cups]		
35	4344		
36	26 [tokens]		
37	1/5		
38	4 [tiles]		
39	53		
40	192 [cubes]		

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010

School Name_____Team #_____

Proctor Name_____Room #_____Division: _____

Final Score:
KEY

First Score

(out of 18)

Team Multiple Choice Contest – Score Sheet

TEAM MULTIPLE CHOICE - 15 minutes

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.

Correct responses are worth 2 points, incorrect responses are worth -1 point and no response is 0 points.

DO NOT WRITE IN SHADED REGIONS

Answer		-1, 0 or 2	-1, 0 or 2
1	C		
2	D		
3	C		
4	D		
5	E [8:30 AM]		
6	B		
7	A		
8	A		
9	A		

"Math is Cool" Masters – 2009-10

5th Grade – May 22, 2010

School Name_____Team #_____

Proctor Name_____Room #_____Div: _____

Final Score:
KEY

First Score

(out of 20)

Team Contest – Score Sheet

TEAM TEST - 15 minutes

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 a 2 or 0.

DO NOT WRITE IN SHADED REGIONS

	Answer	2 or 0	2 or 0
1	1038		
2	[$] 5.50		
3	36 [units]		
4	72 [miles]		
5	A		
6	1, 3, 5 [sloths] [any order]		
7	90 [inches]		
8	276.244		
9	25/30		
10	267		

"Math is Cool" Masters -- 2009-10

KEY

5th Grade – May 22, 2010

School:_____Team #_____

Proctor: _____ Room #_____Div _____

RELAY # 1

Answer for person # 1	Answer for person # 2	Answer for person # 3	Answer for person # 4
9 [monkeys]	**3 [units]**	**1/24**	**360 [bings]**
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
38 [problems]	**10**	**4 [problems]**	**11 [lockers]**
1 or 0	1 or 0	1 or 0	2 or 0