"Math is Cool" Championships – 2012-13

Sponsored by:

5th Grade – March 15, 2013

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.*

Mental Math Questions Attached

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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	What counting number gives the product "36" when multiplied by itself?
2	What is one-half plus one-fourth? Give your answer as a simplified fraction.
3	What is the remainder when 45 is divided by 4?
4	A regular hexagon has a side length of 9 inches. What is the number of inches in its perimeter?
5	On average, Greta eats 3 bananas per hour. At this rate, how many bananas would she eat in two days?
6	Each jump of a frog is 3 feet while each jump of a rabbit is 4 feet. In a race that is 48 feet long, how many MORE jumps will the frog make than the rabbit?
7	How many two-digit counting numbers are multiples of both 9 and 6?
8	What is the sum of the digits of the three consecutive counting numbers whose sum is 2013?

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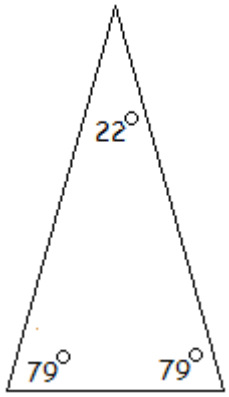
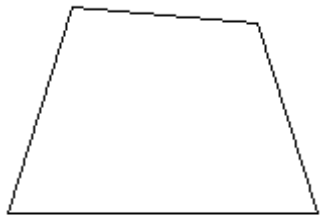
Individual Contest

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	What is the quotient of 342 divided by 19?
2	Erica was 12 years old on her birthday in the year 2001. How many years old will she be on her birthday in 2013?
3	Is the triangle acute, right or obtuse? 
4	What is the difference between 7.2 and 4.63? Express the answer as a decimal.
5	In the following number, what digit is in the thousandths place? 512,300.6087
6	Which mathematical "sentence" is true? Give the letter of the true "sentence." (A) \$11.98 > \$20.91 (B) \$51.30 < \$32.99 (C) \$13.37 = \$ 73.31 (D) \$14.55 > \$11.44
7	How many different counting numbers will divide into 23 with no remainder?
8	Frankie bought 5 calculators that each cost \$13.12. How much in dollars did the 5 calculators cost?

9	Anita has 8 pens and Barbara has no pens. If Anita gave 3 pens to Barbara, how many more pens would Anita then have than Barbara?
10	Gerald has saved $60.00 to buy K-Pop CDs. If each CD costs $13.75, how many CDs will Gerald be able to purchase?
11	Which shape is shown? Only one answer is correct. Answer with a letter. A) Parallelogram B) Quadrilateral C) Rectangle D) Square E) Trapezoid F) Rhombus 
12	What is the average of the following set of data? 2, 9, 14, 1, 3, 1
13	Find the value of 7N – 3 when N = 4
14	Let A = 5/6, B = 6/11, and C = 2/3. Put these fractions in order of increasing size (smallest first). Your answer should consist of 3 letters in the correct order.
15	Find the sum of the following two fractions: $\frac{15}{16} + \frac{1}{2}$ Express your answer as a mixed number.
16	How many prime numbers are between 4 and 27?
17	Joe is 5 years old. He has four older brothers, each 2 years older than the next younger brother. What is the sum of the ages of the 5 brothers, in years?
18	Find the sum of following numbers: 4, -3, 5, -10, 19
19	Find the seventh term of the sequence: 3, -1, -5, -9…
20	What is the least number of lines needed to cut a square into at least 9 pieces?

21	If 2 tires cost $30, at this rate how many dollars would 16 tires cost?
22	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 = 56 B = 13 C = 91 D = 7
23	A test with 65 questions was divided into sections with an equal number of questions in each section. How many questions were in each section? Give the letter of a POSSIBLE answer. A) 6 B) 9 C) 11 D) 13
24	Twelve cars are parked in a row in a parking lot. If every third car has 3 wheels and the rest each have 4 wheels, how many total wheels are on these cars?
25	Spongebob is painting two of his rectangular walls. If one wall is 12 ft by 6 ft, and the other wall is 10 ft by 6 ft, what is the total area of wall he is painting, in square feet?
26	Cameron has 100 pumpkin pies. On the first day, he eats 10% of them. On the second day, he eats 10% of the remaining pies. How many pies does he have left after 2 days?
27	What is the sum of the number of vertices and the number of edges of a pyramid with a square base?
28	Nika and Momo are 18 miles away from each other. They walk directly toward each other, starting at the same time. If Nika walks four miles per hour and Momo walks two miles per hour, how many hours does it take them to meet?
29	If one bear can prevent a forest fire in 33 minutes, how many minutes would it take 3 bears to prevent 4 forest fires?
30	The diagram of the Nth triangular number has 1 dot in the first row, 2 dots in the second row, and so on up through N dots in the Nth row. How many total dots are in the diagram of the fifth triangular number?

Challenge Questions: 3 points each	
31	I have ten marbles in a bag (three blue, four red, and the rest green). I take marbles out of the bag one by one, at random, without replacing any of them. What is the least number of marbles I must take out to guarantee that I get three of a single color?
32	Rita has four cubes, one that is 1 by 1 by 1 inch, one that is 2 by 2 by 2 inches, one that is 3 by 3 by 3 inches, and one that is 4 by 4 by 4 inches. Rita stacks the cubes in order of size and glues them together to make a hanging ornament. What is the total surface area in square inches of the ornament?
33	Put the following four numbers in order of increasing size (smallest first). Your answer should be four letters in the correct order. **A** = the radius of a circle with diameter 5 units **B** = the distance AC of square ABCD with side length 1 unit **C** = the side length of a square with area 0.9 square units **D** = the area in square units of a rectangle that is 2.1 units in width and 1.5 units in length
34	ABC4 +CA4B 488A In the addition problem above, each letter stands for a different digit, and the same letter stands for the same digit wherever it occurs. What is the sum of A, B, and C?
35	Maria added what she thought were the first 10 prime numbers, and got 143 as the sum. Actually, she mistakenly added 9 of the first 10 primes, plus the 11^{th} prime. Which prime number did she leave out?
36	When my number is multiplied by 12, the product is more than 500 but less than 600. When my number is multiplied by 23, the product is more than 900 but less than 1000. What is the sum of all possible whole-number values of my number?
37	Let A, B, C, D, and E stand for 5 numbers (which may be the same or different). The average (mean) of these five numbers is 11, and the average of C, D, and E is 13. What is the average of A and B? If your answer is not a whole number, give it as a fraction.
38	Angela has a fair 8-sided die numbered 1 through 8 and a fair 12-sided die numbered 1 through 12. She rolls the pair of dice a thousand times and writes down the sum of the two numbers showing each time. The average of all these sums will most likely be closest to what whole number?
39	Of all the counting numbers between 1 and 100 that leave a remainder of 3 when divided by 7, how many are divisible by 4 with no remainder?
40	Chris has exactly enough money to buy 36 carrots OR 15 parsnips OR 10 rutabagas. All vegetables of one type cost the same. Chris buys 11 carrots, 4 rutabagas, and some parsnips. What is the largest number of parsnips he can buy?

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Team Multiple Choice Contest

USE THE FOLLOWING INFORMATION TO ANSWER PROBLEMS 1-3.
Farmer Bob has 14 chickens and 16 cows in a field. When he checks to make sure everyone is in the field, he counts their feet. He always counts correctly.

1 Farmer Bob counted 90 feet. What is missing?
A) Chicken B) Cow C) Cannot be determined

2 Farmer Bob counted 80 feet. How many different combinations of animals could be missing?
A) 4 B) 6 C) 8 D) 12
E) Answer not given.

3 In a second field, Farmer Bob also has 30 animals, all either chickens or cows. But in this field, he counts 100 feet. How many cows are in this second field?
A) 30 B) 25 C) 20 D) 10
E) Answer not given

USE THE FOLLOWING INFORMATION TO ANSWER PROBLEMS 4-7.
The following table gives the number of times certain keyboard keys must be replaced after normal usage over the course of one year, and shows the cost of one replacement.

Key	Number of Replacements per Year	Cost per Replacement
e	6	$0.60
s	4	$0.55
t	5	$0.55
a	3	$0.40
enter	2	$0.65
comma	2	$0.35
shift	6	$0.70

4 What is the price of a single replacement of the "enter" key?
A) $0.35 B) $0.40 C) $0.65 D) $0.70
E) Answer not given.

5 What is the total cost of replacing "a" and "e" in one year?
A) $1.00 B) $1.20 C) $3.60 D) $4.80
E) Answer not given.

6 What would it cost to replace all of the keys in the table one time each?
A) $3.25 B) $3.80 C) $4.00 D) $4.15
E) Answer not given.

7 During one year of light usage, each key is replaced two fewer times than normal, to a minimum of one replacement per key. By how much was the cost reduced for replacing the keys for that year?

A) $3.80 B) $4.80 C) $6.60 D) $7.60 E) Answer not given.

USE THE FOLLOWING INFORMATION TO ANSWER PROBLEMS 8-10.

Marcy is shopping for a new car. She would like to buy a car that is going to be the cheapest when the cost of the car and the cost of the gas for 100,000 miles are added together.

Car	Purchase Price	Miles per Gallon	Cost of Gas for 100,000 miles
A	$35,000	50	$8,000
B	$25,000	40	$10,000
C	$20,000	30	?
D	$15,000	20	?
E	$13,000	15	?

8 What is the price per gallon of gasoline that Marcy is using to determine the cost of enough gasoline to drive the cars 100,000 miles?

A) $3.50 B) $3.75 C) $4.00 D) $4.15 E) Answer not given.

9 What does it cost to drive car D for 100,000 miles?

A) $5,000 B) $15,000 C) $16,000 D) $17,000 E) Answer not given.

10 Which car has the lowest combined purchase price and cost of gas to drive 100,000 miles?

A) A B) B C) C D) D E) E

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Team Contest

1	Emma writes the number "8" twenty times, and then adds them all together. Frank divides Emma's sum by five. What is Frank's result, if both Emma and Frank have worked correctly?
2	Subtract the largest counting number less than one thousand from the smallest counting number greater than ten thousand.
3	It takes Ralphie eight weeks to complete his goal of reading 30 books for the library's Summer Reading Challenge. On average, how many days does it take Ralphie to read each book? Answer as a decimal, ROUNDED to the nearest tenth of a day.
4	A straight fence is to be 36 **feet** long. How many fence posts will be needed if one is placed at the start of the fence and every **yard** afterwards?
5	Every time Diana throws a ball for her dog Callie, Callie has to run 88 feet to fetch it and return it to Diana. If Callie runs a total of 8008 feet to fetch and return the ball, how many times has Diana thrown the ball?
6	If you write CIRCUS repeatedly without spaces (CIRCUSCIRCUSCI…), what will be the 500th letter of the sequence?
7	If 3 Jars are equal in value to 5 Bars, and 3 Bars are equal in value to 11 Stars, how many Stars are equal in value to 9 Jars?
8	Let the symbol § stand for the following operation: A § B = (A + B) ÷ 3. What is the value of (34 § 5) § 29?
9	Malte thinks that since 0 isn't worth anything, he can omit it when writing out his homework problems. He worked a problem in which two 3-digit counting numbers are multiplied together to give a 6-digit answer. Leaving out the zeros, he wrote: $37 \times 86 = 2642$. When you insert 4 zeros in their proper places, this equation will be correct. What is the **sum** of the two numbers Malte multiplied?
10	When the digits of a 2-digit counting number are reversed, a new counting number (with either 1 digit or 2 digits) is formed; eg, "57" reverses to "75" and "90" reverses to "9". How many of the 90 two-digit counting numbers reverse to a number that can be divided by 4 with no remainder?

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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	What is 1 + 4?	5
Question 2	Take TNYWG and multiply it by itself.	25
Question 3	Subtract TNYWG from 100.	75
Question 4	Divide TNYWG by 25.	3
	Relay #1	
Question 1	Sally is currently 43 years old. How many years old was she 33 years ago?	10 [years]
Question 2	You have TNYWG quarters. Each candy bar costs 20 cents. How many whole candy bars can you buy?	12 [candy bars]
Question 3	I have 5 pages of problems to work in my math book, each page with 38 problems. If I write the solutions to TNYWG problems on each sheet of paper, how many sheets of paper will I need?	16 [sheets]
Question 4	Multiply TNYWG by the number of different ways to arrange the letters in "CATS."	384
	Relay #2	
Question 1	It takes Stacey 30 minutes to write the 4 questions for one Math is Cool Relay round. How long does it take her, in hours, to write questions for two complete rounds?	1 [hour]
Question 2	Kristin made TNYWG goals in a soccer game. Together Kristin and Billy made 11 goals. Together, Marcy and Billy made 14 goals. How many goals did Marcy make?	4 [goals]
Question 3	On the planet Dozenia, a dodecade has 12 years, a year has 12 months, and a month has 12 days. How many days are there in TNYWG dodecades in Dozenia?	6912 [days]
Question 4	When the product of the digits of TNYWG is divided by the sum of the digits of TNYWG, the answer is how much less than the answer you get when the number 708,432 is divided by the sum of the digits of 708,432?	29512

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COLLEGE KNOWLEDGE BOWL ROUND #1 – SET 1

#	Problem	Answer
1	What is the sum of one hundred ninety-eight and three hundred fifty-seven?	555
2	A pen costs 50 cents and a pencil costs 20 cents. Which is cheaper, 6 pens or 14 pencils?	14 pencils
3	There are 59 apples under my apple tree. If one deer eats 21 of them and another deer eats 6 of them, how many apples are left?	32 [apples]
4	If the wool from one sheep can make 4 coats, how many sheep are needed to supply the wool to make 28 coats?	7 [sheep]
5	Sally has seven dollars and eighty cents. What is the largest number of quarters she could have?	31 [quarters]
6	Find the number of square units in the area of a triangle with a base of 9 units and a height of 6 units.	27 [square units]
7	How many pints are in two and one-half gallons?	20 [pints]
8	What is the number of hours in a day PLUS the number of seconds in a minute MINUS the number of days in January?	53
9	What is the degree measure of the third angle of a triangle having one angle of 68 degrees and one angle of 31 degrees?	81 [degrees]
10	What is the probability of drawing a spade or a queen in one random draw from a standard deck of cards? Answer as a reduced fraction.	four-thirteenths OR 4 over 13

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COLLEGE KNOWLEDGE BOWL ROUND #2 - SET 2

#	Problem	Answer
1	How many hours are in 11 days?	264 [hours]
2	What is the sum of twenty-four and sixty-seven?	91
3	Stacey has five pink candles, nine green candles, and six yellow candles. If Stacey chooses a candle at random, what is the probability, as a PERCENTAGE, that it is yellow?	30 [percent]
4	Amy completed two-thirds of a race in 30 minutes. At this same speed, how many MORE minutes will it take her to finish the race?	15 [minutes]
5	The outside temperature dropped from 10 degrees Fahrenheit to negative 5 degrees Fahrenheit. How many degrees Fahrenheit did the temperature drop?	15 [degrees]
6	Dave has 20 CD's with 12 songs on each. How many songs does Dave have on his CD's?	240 [songs]
7	If Jessie rolls a standard die 90 times, how many times should she expect to roll "4"?	15 [times]
8	The sum of two numbers is 782. If one number is 415, what is the other number?	367
9	How many rectangular tiles 3 feet by 4 feet would be needed to cover a rectangular floor 120 feet by 200 feet?	2000 [tiles]
10	If Annie adds 739 to her favorite number, the sum is 2013 more than the result that Bob gets when he subtracts 739 from his favorite number. How much greater is Annie's favorite number than Bob's?	535

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COLLEGE KNOWLEDGE BOWL ROUND #3 - SET 3

#	Problem	Answer
1	Lianne has a QUART of milk. After she drinks a PINT of the milk, how many CUPS of milk are left?	2 [cups]
2	Find the median of the following set of numbers: 21, 9, 18, 36, 41, 44, 12	21
3	A regular pentagon has a perimeter of 70 inches. What is the side length of the pentagon, in inches?	14 [inches]
4	John wants to cut a board into 5 pieces. How many cuts are needed if he does not stack the pieces for cutting?	4 [cuts]
5	Danielle has 20 pens in which she keeps her 200 giraffes. On average, how many giraffes are in each pen?	10 [giraffes]
6	Cameron can pole vault 15 feet. Jacob can pole vault two-thirds as high as Cameron. How many feet high can Jacob pole vault?	10 [feet]
7	There are six red marbles, four blue marbles, and X green marbles in a bag. In one random draw, the probability that a red marble is drawn is two-fifths. What is X?	[X =] 5
8	Janice sends six hundred text messages a day. She sleeps nine hours a day. On average, how many text messages does Janice send an hour when she's awake?	40 [messages]
9	A rectangular field is 12 YARDS wide by 90 YARDS long. What is the area of the field, in square FEET?	9720 [square feet]
10	Jeffrey has seven thousand quarters, two thousand five hundred dimes, two hundred nickels and two hundred pennies. How many dollars does he have in all?	2012 [dollars]

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COLLEGE KNOWLEDGE BOWL ROUND #4 - SET 4

#	Problem	Answer
1	Erica had a collection of 600 "Hello Kitty" toys. She sold three-fourths of them. How many of these toys does she have left?	150 [toys]
2	How much more is one thousand than one hundred?	900
3	I have 3 chickens with 2 legs each, and some crickets with 6 legs each. If there are 36 legs in all, how many crickets do I have?	5 [crickets]
4	What is the remainder when 356 is divided by 12?	8
5	Grace had 5 baskets with 6 apples in each basket. She sold two baskets of apples. How many apples does Grace have left?	18 [apples]
6	Hal has one dollar and fifty cents. If Hal gives Sally half of his money, how many CENTS will he have left?	75 [cents]
7	How many times does the digit "2" appear in a prime number less than 50?	3 [times]
8	A carton of eggs holds one dozen eggs. Julia has a full carton of eggs, and another carton that is half full. How many complete omelets can she make if each omelet takes 4 eggs?	4 [omelets]
9	Bob the cat sleeps 21 hours a day, chosen at random. As a reduced fraction, what is the probability that Bob is awake to greet you when you get home?	one-eighth OR one over eight
10	Find the quotient when the product of "**6 times 5 times 4 times 3 times 2 times 1"** is divided by the product of "**2 times 2 times 2"**.	90

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COLLEGE KNOWLEDGE BOWL ROUND #5 - SET 5

#	Problem	Answer
1	How many meters are in two kilometers?	2000 [meters]
2	Alex spends eight hours a day playing Xbox, six hours talking to his friends, and seven hours eating or sleeping. All other time is devoted to studying math. If he only does one thing at a time, how many hours a WEEK does he study math?	21 [hours]
3	How many months are there in two point seven five years?	33 [months]
4	If there are 11 pig pens that can hold 9 pigs each, how many pigs can be held in the pens?	99 [pigs]
5	What is 97 PLUS 18 MINUS 23?	92
6	What is the perimeter, in feet, of a triangle with sides of length 8 feet, 7 feet and 5 feet?	20 [feet]
7	How many of the following terms correctly describe a square? cube, rectangle, parallelogram , polygon	3 [terms]
8	What is the largest counting number that will divide into both 48 and 96 with no remainder in either case?	48
9	How many diagonals can be drawn in a regular pentagon?	5 [diagonals]
10	In sixty minutes, how many degrees does the hour hand move on an analog wall clock?	30 [degrees]

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COLLEGE KNOWLEDGE BOWL ROUND #6 - SET 6

#	Problem	Answer
1	Biff has 4 coins that total to 50 cents. How many dimes does he have?	2 [dimes]
2	There are 75 kids in a popular math class. Two out of every 15 kids have a pet cat. How many kids in the class have a pet cat?	10 [kids]
3	A "baker's dozen" is a dozen, plus one extra. Camille has seven boxes, each with a baker's dozen of cupcakes in it. How many cupcakes are there in all?	91 [cupcakes]
4	How many SECONDS are there in four and one-half HOURS?	16,200 [seconds]
5	A circle has a diameter of 12 inches. A square has a side length that is equal to the radius of this circle. What is the number of square inches in the area of the square?	36 [square inches]
6	For the following set of numbers, how much smaller is the median than the mean or average? If your answer is not a whole number, give it as a decimal. 7, 14, 3, 6, 10	1
7	Of all the candy in a dish, Susan takes one-third, while Brian takes one-half. What fraction of the candy is left in the dish?	one-sixth OR one over six
8	Gina counts by sevens, starting with 3. That is, she says "3, 10, 17", and so on. What is the largest number less than 100 that Gina will say?	94
9	How many dimes have the same value as 34 quarters?	85 [dimes]
10	The two smaller angles of a triangle have the same degree measure, which is half the degree measure of the largest angle. What is the degree measure of the largest angle of this triangle?	90 [degrees]

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COLLEGE KNOWLEDGE BOWL ROUND - EXTRA

#	Problem	Answer
1	What is 729 divided by 81?	9
2	What is the PRODUCT of the first five even counting numbers?	3840
3	What is the sum of the three smallest prime numbers?	10

Final Score:

KEY

First Score

(out of 8)

"Math is Cool" Championships – 2012-13

Sponsored by:

5th Grade – March 15, 2013

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	6		
2	3/4		
3	1		
4	54 [inches]		
5	144 [bananas]		
6	4 [jumps] or [more jumps]		
7	5 [numbers]		
8	42		

"Math is Cool" Championships – 2012-13

5th Grade – March 15, 2013

School Name_____Team #_____

Proctor Name_____Room #_____

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	A		
2	A		
3	C		
4	C		
5	D		
6	B		
7	C		
8	C		
9	E ($20,000)		
10	C		

"Math is Cool" Championships – 2012-13

5th Grade – March 15, 2013

School Name_____Team #_____

Proctor Name_____Room #_____

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	32		
2	9002		
3	1.9 [days]		
4	13 [fence posts]		
5	91 [times]		
6	I		
7	55 [Stars]		
8	14		
9	1167		
10	20 [numbers]		

"Math is Cool" Championships -- 2012-13

5th Grade – March 15, 2013

School:_____Team #_____

Proctor: _____ Room #_____

PRACTICE RELAY

Answer for person # 1	Answer for person # 2	Answer for person # 3	Answer for person # 4
5	**25**	**75**	**3**
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
10 [years]	**12 [candy bars]**	**16 [sheets]**	**384**
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
1 [hour]	**4 [goals]**	**6912 [days]**	**29512**
1 or 0	1 or 0	1 or 0	2 or 0

Final Score:

First Score
(out of 8)

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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 – 2012-13

5th Grade – March 15, 2013

School Name_____Team #_____

Proctor Name_____Room #_____

First Score
(out of 20)

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1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

"Math is Cool" Championships – 2012-13

5th Grade – March 15, 2013

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Proctor Name_____Room #_____

First Score
(out of 10)

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DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

"Math is Cool" Championships – 2012-13

March 15, 2013 – 5th Grade

Final Score: 1-15	Final Score: 16-30	Final Score: 31-40
KEY	KEY	KEY

STUDENT NAME: _____ **School Name:** _____

Proctor Name: _____ Team #: _____ Room #: _____

DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1	18		
2	24 [years]		
3	Acute		
4	2.57		
5	8		
6	D		
7	2 [numbers]		
8	[$]65.60		
9	2 [pens]		
10	4 [CD's]		
11	B		
12	5		
13	25		
14	BCA		
15	1 7/16		
1-15 TOTAL:			

	Answer	1 or 0	1 or 0
16	7 [prime numbers]		
17	45 [years]		
18	15		
19	-21		
20	4 [lines]		
21	[$]240		
22	CB [this order]		
23	D		
24	44 [wheels]		
25	132 [square ft.]		
26	81 [pies]		
27	13		
28	3 [hours]		
29	44 [minutes]		
30	15 [dots]		
16-30 TOTAL:			

	Answer	1 or 0	1 or 0
31	7 [marbles]		
32	152 [sq inches]		
33	CBAD		
34	11		
35	17		
36	85		
37	8		
38	11		
39	3 [numbers]		
40	4 [parsnips]		
31-40 TOTAL:			

5th Grade

Final Score: 1-15	Final Score: 16-30	Final Score: 31-40

"Math is Cool" Championships – 2012-13

March 15, 2013 – 5th Grade

STUDENT NAME: _____ **School Name:** _____

Proctor Name: _____ Team #: _____ Room #: _____

DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
1-15 TOTAL:			

	Answer	1 or 0	1 or 0
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
16-30 TOTAL:			

	Answer	1 or 0	1 or 0
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
31-40 TOTAL:			

5th Grade