"Math is Cool" Masters – 2013-14

May 17, 2014

Total Correct

KEY

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

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

4th Grade Individual Contest – Score Sheet

DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1	28		
2	33		
3	CADB		
4	90		
5	24 [years]		
6	333		
7	58 [units]		
8	92		
9	11 [pieces]		
10	DCAB		
11	1/16		
12	18 [hours]		
13	20 [inches]		
14	37.45		
15	105		
1-15 TOTAL:			

	Answer	1 or 0	1 or 0
16	60 [degrees]		
17	11 [tablets]		
18	33 [bites]		
19	110 [widgets]		
20	54 [ounces]		
21	21 [inches]		
22	189		
23	[X=] 123		
24	[$] 23		
25	419		
26	40 [kiwis]		
27	14 [pieces]		
28	800 [miles]		
29	315 [miles]		
30	9 [cubes]		
16-30 TOTAL:			

	Answer	1 or 0	1 or 0
31	8/9 [miles]		
32	2		
33	$8\frac{7}{16}$ [gal]		
34	0		
35	637		
36	2 or 6 or 10 or 14 or 18 [dimes] [only 1 answer needed]		
37	15 [sums]		
38	E		
39	143		
40	1/4		
31-40 TOTAL:			

4th Grade

Total Correct

"Math is Cool" Masters – 2013-14

May 17, 2014

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

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

4th Grade Individual Contest – Score Sheet

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:			

4th Grade

"Math is Cool" Masters – 2013-14

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May 17, 2014

4th Grade Mental Math Contest

Follow along as your proctor reads these instructions to you. Your Mental Math score sheet is on the back.

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.*

Mental Math – 30 sec per question

8 problems read orally to everyone - Approximately 8% of Individual Score - 25% of team score

You may NOT be seated next to anyone from your school. If you are MOVE NOW to avoid being disqualified! 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.*

"Math is Cool" Masters – 2013-14

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4th Grade – May 17, 2014

Mental Math Contest

Mental Math – 30 sec per question

8 problems read orally to everyone - Approximately 8% of Individual Score - 25% of team score

You may NOT be seated next to anyone from your school. If you are MOVE NOW to avoid being disqualified! 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.*

#	Problem
1	Kevin is two meters plus two centimeters tall. How many centimeters tall is Kevin?
2	If three tangerines weigh the same as one apple, how many tangerines will it take to weigh the same as six apples?
3	If you subtract eight from my number, you will get twenty-nine. What is my number?
4	What is the smallest whole number you could multiply by seven to get a product greater than ninety?
5	How many squares, each having a **perimeter** of 12 centimeters, can be cut from a square having a **perimeter** of 60 centimeters?
6	Sandy has two dollars and seventy-five cents in quarters. How many quarters does Sandy have?
7	If it will be midnight in seventy-six minutes, what time is it now? Be sure to include "AM" or "PM" with your answer.
8	Today is May **seventeenth**, and **seventeen** is an odd number. Find the sum of all the odd-numbered days in May that are **after** today.

“Math is Cool” Masters – 2013-14

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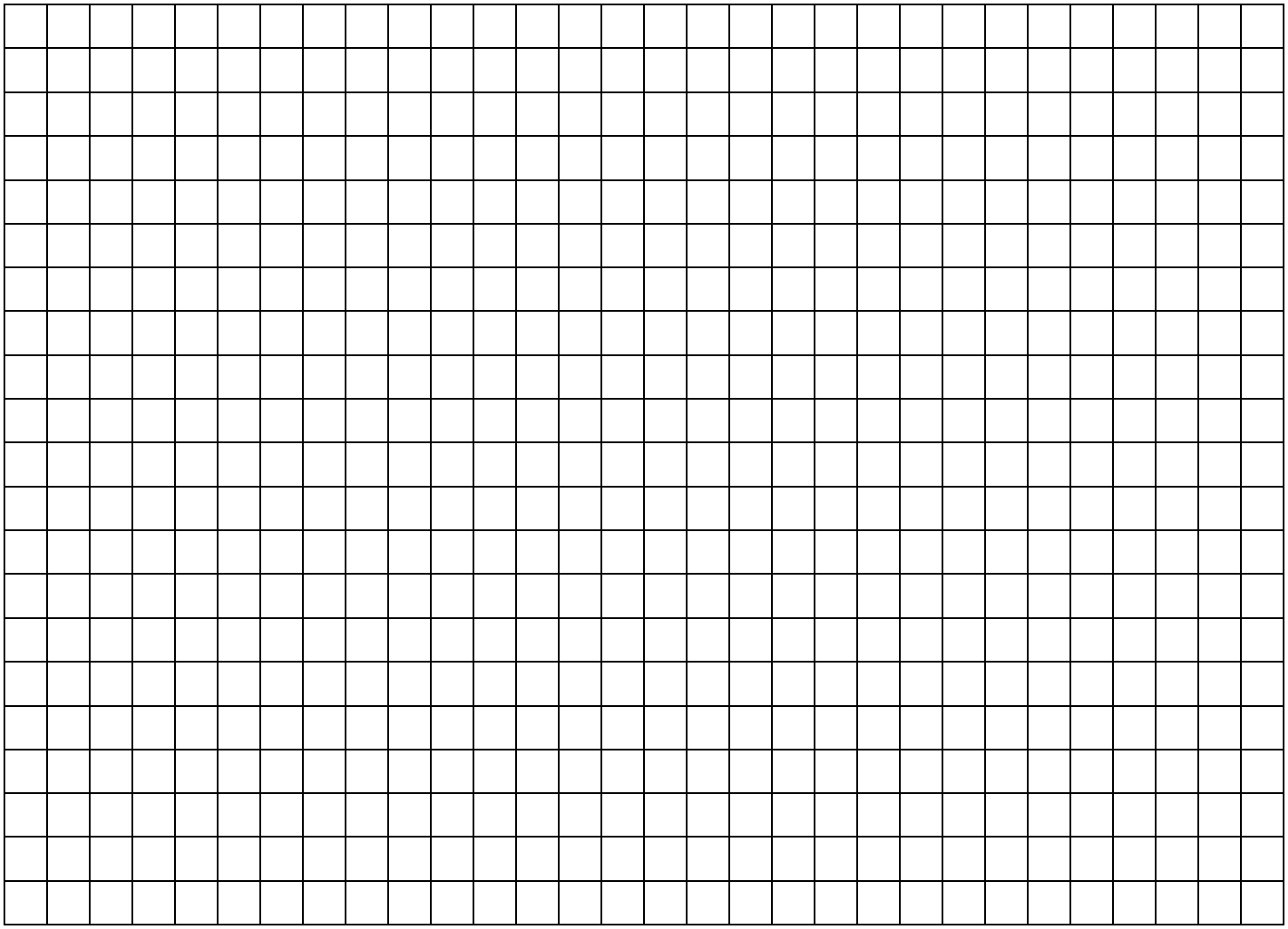
May 17, 2014

Individual Contest – 4th Grade

Tear this cover sheet and scratch paper off and fill out the top of the colored answer sheet prior to the start of the test. The graph below is for your use, if needed.

INDIVIDUAL TEST - 35 minutes

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.



"Math is Cool" Masters – 2013-14

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4th Grade – May 17, 2014

Individual Contest

Record all answers on the colored cover sheet.

	Questions 1-30: 2 points each
1	Four hippos swam in a pool at the zoo. What was the total number of hippo feet, tails, and ears in the pool?
2	What is the sum when 14 is added to half of 38?
3	Put the following four numbers in order of increasing size (smallest first). Your answer should be 4 letters in the correct order. A = 2370.0 B = 23,704 C = 374.237 D = 20,374
4	Lorie skip-counts backwards from 150 by 6, starting "150, 144, …", and so on. What is the largest multiple of 5 she will say that is less than 100?
5	Maria is twice as old as Lin. Lin is four years older than Juan. Juan is 8 years old. How many years old is Maria?
6	I'm thinking of a counting number greater than 100. All its digits are the same. When my number is divided by 9, there is no remainder. What is the smallest my number could be? (**NOTE**: A counting number is a whole number greater than zero; that is, 1, 2, 3, and so on.)
7	What is the distance on the number line from thirty-six to ninety-four?
8	Find the value of the following sum: 13 + 13 + 13 + 13 + 13 + 9 + 9 + 9 = ?
9	There were eight pieces of paper in a wastebasket. Marcy took out one of the pieces of paper and tore it into four pieces, then threw these pieces back into the wastebasket. How many pieces of paper were then in the wastebasket?
10	Put the following four values (A through D) in order of increasing size (smallest first). Your answer should be four letters in the correct order. $A = 31 + 42$ $B = 98 - 12$ $C = 8 \times 9$ $D = 123 \div 2$
11	What is one-half of one-eighth? Answer as a simplified (reduced) fraction.
12	Over the course of two days, Diane biked a total of 120 miles at 8 miles per hour. The next day, she biked 42 miles at 14 miles per hour. How many hours did she spend biking for the entire trip?
13	A square and a regular hexagon each have the same side length. If the perimeter of the hexagon is 30 inches, what is the perimeter of the square, in inches?
14	Round off 37.45286 to the nearest hundredth.
15	What is the sum of the numbers in the arithmetic (addition) sequence 5, 10, 15 and so on, up through 30?
16	The clock on the classroom wall shows 2 o'clock. In degrees, what is the smaller angle between the two hands of the clock?
17	The vet prescribed some medicine for our cat Kippy. The directions on the bottle say, "Give 1/2 tablet every 12 hours for 7 days, and then for days 8 through 14, give 1/2 tablet every 24 hours." If we give the first dose at 8 AM, what is the smallest number of whole tablets there must be in the bottle so we can follow these directions?

18	Bonnie Baker baked several batches of Brownie Bites, with a dozen Brownie Bites in each batch. As soon as the first batch was ready, Bonnie ate eight of them. For each later batch, she ate half as many as she ate from the previous batch, so that for the last batch, she ate only one. How many Brownie Bites did Bonnie have left?
19	Sam worked for an hour, making three widgets every two minutes. Tim joined Sam for the last quarter of the hour, making four widgets every three minutes. How many widgets did they make altogether?
20	A rectangular blanket 2.5 feet by 21 inches weighs 1 pound 2 ounces. Another rectangular blanket of the same material and thickness is 4.5 feet by 35 inches. In OUNCES, how much does the larger blanket weigh?
21	Kippy the cat jumped from the floor to the top of a stack of books 2.5 feet high, then from there to a shelf 4.25 feet high. What was the height of her second jump, in **INCHES**?
22	When you add the digits of a counting number together, the sum you get is called the "digital sum". What is the smallest 3-digit counting number whose digital sum is greater than seventeen?
23	When the sum of 86 and X is divided by 11, the quotient is 19, and there is no remainder. What is X?
24	Jake had $3.20 in savings on March 1st. By the end of March, the amount of his savings was five times what it was on March 1st. During April, he added $7 to his savings. What was the value in dollars of Jake's savings at the end of April?
25	Ariana adds "14 + 14 + 14 + …", and so on until she gets a sum greater than 200. Bill adds "13 + 15 + 13 + 15 + …", and so on until he gets a sum greater than 200. What is the sum of Ariana's sum and Bill's sum?
26	Two kiwi fruits weigh the same as one plum. Five plums weigh the same as one orange. Three apples weigh the same as two oranges. How many kiwi fruits would it take to weigh the same as six apples? Assume that all fruits of the same type weigh the same.
27	Vivek has a sign saying "MATH IS COOL MASTERS". He cuts it up into pieces such that each piece has a single letter on it. He puts the pieces in a box, shuffles them up, and takes out pieces one at a time at random. How many pieces will he have to take out to be sure of getting 3 **different letters** that do not occur in the word "maths"?
28	On a 1200-mile car trip, Joni takes along two spare tires (in addition to the four on her car). If she wants each tire to get an equal amount of wear on the trip, how many miles should each tire travel?
29	Roger and Susan start on a trip at the same time, driving separately. Roger drives 54 miles per hour, and Susan drives 63 miles per hour. When Roger has driven 270 miles, how many miles has Susan driven?
30	How many cubes of side length 3 units would it take for their total volume to be greater than the volume of a cube of side length 6 units?

Challenge Questions: 3 points each	
31	In a riverside park, Lisa hiked from the trailhead to a waterfall. After walking one-fourth of the distance, she stopped to take pictures, and then walked the remaining two-thirds of a mile to the waterfall. What is the distance in miles from the trailhead to the waterfall? If your answer is not a whole number, give it as a reduced fraction.
32	Biff and Eho had the same secret number. Biff multiplied their secret number by 5 and then subtracted 4. Eho multiplied their secret number by 8 and then subtracted 10. They both got the same answer! What is their secret number?

33	While visiting Vivian in Texas, Helen buys a 10-gallon cowboy hat. They want to see if it really holds 10 gallons. Helen pours water into the hat a rate of 5 cups per minute, while Vivian pours water into the hat at a rate of 2 pints per minute. If it takes them 15 minutes, working together, to fill the hat, how many gallons of water does the hat hold? If your answer is not a whole number, give it as a simplified mixed number.
34	The symbol ¶ between two numbers means to divide the smaller number into the larger and take the remainder to the next step. The value of the expression is the final remainder. Parentheses indicate order of operations, as usual. Find the value of the following expression: ((876 ¶22) ¶ (359 ¶ 17))
35	In the equation below, each letter stands for the same digit wherever it occurs. What is the greatest possible difference between the two 3-digit counting numbers BAB and ABA? ABA + BAB = CCC
36	Roger has 27 standard U.S. coins worth a total of $3.65. No coin is worth more than 30¢ or less than 3¢. How many dimes could Roger have? (NOTE: There may be more than one possible answer, but you only need to give one correct answer.)
37	Zico added two distinct (different) factors of 124 and wrote the sum. How many different sums could he have written?
38	Smaug can put his gold coins into either two groups, or three groups, or four groups, with a different **prime** number of coins in each group and no coins left over in each case. Which one or more of the following could NOT be the number of gold coins Smaug has? Your answer should be one or more letters (A through E), in any order. A = 90 B = 75 C = 60 D = 45 E = 30
39	Alison's number has 2 digits, both the same ("AA"), and Brad's number also has 2 digits, both the same ("BB"). When Alison's number and Brad's number are multiplied, the product is the 4-digit counting number 5??2, where each "?" stands for an unknown digit. What is the sum of AA and BB?
40	Charlie randomly chooses a 2-digit counting number less than 30, and finds the sum of its distinct factors. (For example, the distinct factors of 12 are 1, 2, 3, 4, 6, and 12, and their sum is 28.) What is the probability, as a reduced fraction, that Charlie's sum is 40 or greater?

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4th Grade – May 17, 2014

Team Multiple Choice Contest

USE THE FOLLOWING INFORMATION TO ANSWER QUESTIONS #1-#3.
The round song "Row Your Boat" has four lines, as follows:
line 1: Row, row, row your boat
line 2: Gently down the stream
line 3: Merrily, merrily, merrily, merrily
line 4: Life is but a dream.

Four singers sing the round, each starting and ending at a different time. Each singer starts with line 1, continues to the end, and then stops. When the first singer starts line 2, the second singer starts line 1. When the first singer starts line 3, the third singer starts line 1, and so on.

1	By the time the second singer finishes the song, how many times has the word "row" been sung? A) 6 B) 9 C) 12 D) 24 E) Answer not given.
2	By the time the third singer finishes line 2, how many times has the word "merrily" been sung? A) 4 times B) 8 times C) 12 times D) 16 times E) Answer not given.
3	Assume that each line takes 4 seconds to sing. How many seconds does it take from the time the first singer starts line 1 to the time the last singer finishes line 4? A) 16 seconds B) 64 seconds C) 28 seconds D) 24 seconds E) Answer not given.

USE THE FOLLOWING INFORMATION TO ANSWER QUESTIONS #4-#6:
Louisa gives bags of gummy bears to her best friend Eliza. The first bag she gives Eliza has 3 gummy bears, the second bag has 9 gummy bears, and in each later bag there are triple the number in the previous bag.

4	How many more gummy bears are there in the third bag than in the second bag? A) 81 B) 54 C) 27 D) 18 E) Answer not given.
5	Eliza just received the first bag that has more than a hundred gummy bears in it. How many gummy bears did it contain? A) 243 B) 300 C) 729 D) 102 E) Answer not given.
6	What is the smallest number of **bags** Eliza could have received if she got more than 1000 gummy bears in all from Louisa? A) 5 B) 6 C) 7 D) 333 E) Answer not given.

USE THE FOLLOWING INFORMATION TO ANSWER QUESTIONS #7-#10:
Slackers are hairy, green, slow-moving animals that live in trees. Different species of slacker are named by the number of toes they have on each foot — 2, 3, or 5. All slackers have four feet.

7	What is the smallest number of toes there could be in a group of 10 slackers, given that there are more 3-toed than 2-toed slackers in the group, and no 5-toed slackers? A) 26 B) 96 C) 100 D) 104 E) Answer not given.
8	A group of 2-toed slackers and 3-toed slackers has 80 toes altogether. What is the smallest number of slackers there could be in the group? A) 7 B) 5 C) 6 D) 10 E) Answer not given.
9	A group of 2-toed, 3-toed, and 5-toed slackers had 13 heads and 192 toes altogether. If there was exactly one 3-toed slacker in the group, how many 5-toed slackers were there? A) 8 B) 7 C) 6 D) 5 E) Answer not given.
10	In a group with at least one 2-toed, one 3-toed, and one 5-toed slacker, Anthony counts the toes on one foot of each animal. He gets a total of 28 toes. How many different numbers of slackers could there be in the group? A) 4 B) 5 C) 6 D) 7 E) Answer not given.

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4th Grade – May 17, 2014

Team Contest

1	When Pat measures one side of a rectangle of area 105 square inches, he finds that it is 5 inches. How many inches greater is the total length of the two long sides of the rectangle than the total length of the two short sides?
2	It takes 4 apples, 6 pears, and 8 peaches to make one fruit maxi-salad. It takes two fruit maxi-salads to make one giga-pie. If Benjamin has 57 apples, 29 pears, and 64 peaches, how many whole giga-pies can he make?
3	Norah has 87¢, Millie has 70¢, and Lawrence has 45¢. Each person has only a single type of standard U.S. coin, and no two people have the same type of coin. How many **coins** do they have altogether?
4	Miss Moroney wrote the following equation on the whiteboard: 86 + [] + [] + [] = () + ()+ () + {} + {} The same number goes in each [], 45 goes in each (), and 1 goes in each {}. What number goes in []?
5	Alice multiplies $1\times2\times3\times4\times5\times6\times7\times8\times9\times10$. She then divides this product by 2, and gets a quotient with no remainder. Bob now divides Alice's quotient by 2 and gets a new quotient, also with no remainder. This continues, with each member of Alice's Math Club dividing the previous answer by 2, to get a quotient with no remainder, until the last member of the club divides and gets a quotient with remainder 1. How many members are in Alice's Math Club (including Alice and Bob)?
6	Sally wrote the number "856321". She then inserted a decimal point in this number to create a new number whose value is between the value of the fraction $\frac{913}{17}$ and the value of the fraction $\frac{1745}{3}$. What **whole counting number** is closest to the decimal number Sally created?
7	Laura writes the following digits in a row: **1 2 3 4 5 6**. She then inserts one multiplication symbol somewhere in the row between two digits, to make a multiplication problem (eg, 12 X 3456 is one problem she could make). What is the largest possible product of any problem she could make?
8	My mystery fraction is fully simplified (reduced), and has a value more than one-fifth but less than one. The sum of its numerator and denominator is 10. The sum of the numerator and denominator of an equivalent, unsimplified fraction is 80. What is the denominator of this unsimplified fraction?
9	A 12-hour digital clock shows hours and minutes, but not seconds. The sum of the digits showing on the clock now is 10. The next time the sum of the digits will be 10 is 32 minutes from now. What time is showing on my clock now? (Don't put AM or PM on your answer.)
10	My special Uneven Calculator subtracts 1 from every odd number I enter, and adds 2 to every even number I enter. It then correctly calculates with these changed numbers, and correctly displays the answer it gets. I enter and add two counting numbers, and the displayed sum is 10. What is the difference between the largest and the smallest possible PRODUCT of the two numbers I entered? (**NOTE**: Zero is not a counting number.)

"Math is Cool" Masters – 2013-14

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4th Grade – May 17, 2014

Relay Contest

RELAYS - 5 minutes per relay – 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(s) and will need to fill out the top. The proctor will hand out a strip of paper to each person. These need to be face down on your desk until it is time for the relay to start. 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 your answer. However, when person #1 figures out his/her problem, he/she will record ***just his/her final answer*** *on the answer sheet and pass only the answer sheet back to the person behind. This continues until person #4 puts an answer on the answer sheet and gives it to the proctor. A correct answer from person #1, #2 and #3 is worth 1 point each. A correct answer from person #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 put your teammate's answer that they pass back to you, and then you should be able to solve your question. Once the relay begins, turn over your strip of paper and* ***make sure you have the right person number.*** *Remember, no talking and remain facing forward to avoid being disqualified!*

	Relay #1	Answer
Person 1	A herd of (normal) cows has at least 30 feet. What is the smallest number of cows there could be in the herd?	8 [cows]
Person 2	When the product of 18 and 17 is divided by TNYWG, what is the remainder?	2
Person 3	When X copies of TNYWG are multiplied together, the product is 64. What is X?	[X=] 6
Person 4	I have TNYWG dollars in standard U.S. coins. If I have 7 quarters, 65 pennies, and 11 dimes, what is the largest number of nickels I could have?	50 [nickels]
	Relay #2	Answer
Person 1	How many feet are in 3 yards plus 12 inches?	10 [feet]
Person 2	What is (5 x 4) + 7 – (TNYWG + 2)?	15
Person 3	Add TNYWG to the following sum: 15+10+14+11+13+12	90
Person 4	One angle of a triangle is TNYWG degrees. If a second angle is 63°, what is the degree measure of the third angle of the triangle?	27[°]

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4th Grade – May 17, 2014

COLLEGE KNOWLEDGE BOWL ROUND #1 – SET 1

#	Problem	Answer
1	Baby Margaret is one year and seven months old. How many months old is Baby Margaret?	19 [months]
2	Ian had two dozen apples, and ate thirteen of them. How many apples did Ian have left?	11 [apples]
3	What is the sum of the smallest 2-digit counting number and the largest 2-digit counting number?	109
4	If the students in a class can be divided into groups of two, four, or six students with nobody left over in any case, what is the smallest number of students there could be in the class?	12 [students]
5	If half my number is twenty-two, what is twice my number?	88
6	Four sides of a pentagon have length five, four, nine, and seven inches. If the perimeter of the pentagon is thirty-one inches, what is the length in inches of the fifth side?	6 [inches]
7	Find the missing term that goes in the blank for the following number pattern: thirty-four, forty-five, **BLANK**, sixty-seven, seventy-eight, and so on…	56
8	Joey rolled three standard cubical dice and added up the numbers showing on the top faces. How many different sums are possible?	16 [sums]
9	Amy left her house at 2:35 PM and returned at 4:10 PM the same day. How many **minutes** was she gone?	95 [minutes]
10	How many stacks of ten pennies each would it take to equal the value of thirty-two stacks of ten quarters each?	800 [stacks]

"Math is Cool" Masters – 2013-14

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4th Grade – May 17, 2014

COLLEGE KNOWLEDGE BOWL ROUND #2 – SET 2

#	Problem	Answer
1	What time will it be one hundred twenty-eight minutes after noon? Be sure to include "AM" or "PM" with your answer.	2:08 PM
2	Subtract four-hundred sixty-five from seven-hundred twenty-nine.	264
3	Name all of the following shapes that are quadrilaterals: decagon, circle, square, rectangle, octagon	square, rectangle [in any order]
4	If one-third of my number is twenty, what is one-fourth of my number?	15
5	Sally can read forty-two pages of a book in an hour. At this rate, how many hours would it take her to finish reading a book with five-hundred forty-six pages?	13 [hours]
6	If Robbie runs thirty miles in five hours, what is his average speed, in miles per hour?	6 [miles per hour]
7	I know my ten party guests will eat at least eight cookies apiece. If each box contains six cookies, how many boxes would I have to buy to feed my ten guests?	14 [boxes]
8	An overweight comedian joked that his weight at birth was "seven pounds and eight hundred ounces". What would this weight be in pounds?	57 [pounds]
9	Find the missing term that goes in the blank for the following number pattern: three, four, six, nine, BLANK, eighteen, twenty-four, and so on	13
10	Bonnie Baker bakes four cakes, all the same size. Bonnie eats three-fourths of a cake, Connie eats three-eighths of a cake, and Donnie eats nine-eighths of a cake. As a simplified **mixed number**, how many cakes are left?	1 3/4 [cakes]

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4th Grade – May 17, 2014

COLLEGE KNOWLEDGE BOWL ROUND #3 – SET 3

#	Problem	Answer
1	What is two-hundred fourteen subtracted from two-thousand fourteen?	1800
2	What day of the week will it be seventy-five days after Saturday?	Thursday
3	Every year, Leon's family holds a reunion celebration that lasts six days, during which they exchange gifts. At this year's reunion, Leon got the same number of gifts each day. If he got a total of twelve gifts, how many gifts did he get each day?	2 [gifts]
4	Sita drank half a cup of juice from a bottle holding twelve fluid ounces of juice. How many fluid ounces of juice did Sita have left?	8 [fluid ounces]
5	John writes one math problem every three minutes, while Karen writes one math problem every minute. After an hour, how many more problems has Karen written than John?	40 [problems]
6	Find the mode of the following collection of values: two, four, seven, two, nine	2
7	Jinglin is thirteen years old, and Kim is twice Jinglin's age. In how many years will the sum of their ages be ninety-nine years?	30 [years]
8	A certain glacier is shrinking at a constant rate of four inches a year. How many years will it take the glacier to shrink six **feet**?	18 [years]
9	When I open the book I am reading, the sum of the two page numbers facing me is one hundred thirty-three. What is the larger of these two page numbers?	[page #] 67
10	Dora makes a cake in a square cake pan that is eight inches on a side. She cuts the cake into square pieces each two inches on a side. If, instead, she had cut the cake into square pieces one inch on a side, how many **more** pieces would she have gotten?	48 [pieces]

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4th Grade – May 17, 2014

COLLEGE KNOWLEDGE BOWL ROUND #4 – SET 4

#	Problem	Answer
1	Each of Elaine's pencils is three inches long. If she lays them all end-to-end, the line of pencils would be five feet long. How many pencils does Elaine have?	20 [pencils]
2	In describing a cube, which one of the following words means the same as "corner"? EDGE ANGLE VERTEX FACE DIAGONAL	vertex
3	What is the largest possible number of days in three consecutive years?	1096 [days]
4	Erase all the even digits from the number "seven million, two hundred fifty thousand, fifty-three", and then double the resulting number.	15,106
5	Find the product of the four smallest counting numbers.	24
6	How many centimeters are there in five hundred ten meters?	51,000 [cm]
7	Jamie's lucky number is a factor of twenty-four and a multiple of three. What is the largest Jamie's lucky number could be?	24
8	There are four gummy bears and some gummy worms in a bag. If I take out one gummy thing at random, the probability that it will be a gummy worm is one-third. How many gummy worms are in the bag?	2 [gummy worms]
9	The hour and minute hands of a broken watch move at the correct speed, but backwards (that is, counterclockwise). If the watch is set to the correct time at midnight, what is the actual time when the broken watch first shows a time of 8:30? Include "AM" or "PM" with your answer.	3:30 AM
10	Alice and Bob each picked some cherries. If Alice would pick seventy-three more cherries, she would have one hundred sixteen. If Bob ate seventy-three of his cherries, he would have eighty-four left. What was the total number of cherries Alice and Bob had originally?	200 [cherries]

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4th Grade – May 17, 2014

COLLEGE KNOWLEDGE BOWL ROUND #5 – SET 5

#	Problem	Answer
1	How many seconds are in nine minutes?	540 [seconds]
2	When I divide my secret number by seven, the quotient is fourteen and the remainder is four. What is my secret number?	102
3	What is the name of a triangle that has all its sides the same length?	equilateral OR regular
4	Apples cost fifty-eight cents each and bananas cost twenty-seven cents each. How many **CENTS** does it cost to buy six apples and three bananas?	429 [cents]
5	A palindrome is a counting number that remains the same when its digits are reversed. I'm thinking of a 3-digit palindrome. If the middle digit is the same as the product of all its digits, what is the largest my number could be?	909
6	Find the product of seventeen and thirteen, and then subtract the sum of forty-three and seventy-nine.	99
7	Colin's favorite number is a prime number less than ten. How many factors does a Colin's favorite number have?	2 [factors]
8	The sum of two counting numbers is one hundred seventy-five. What is the greatest possible difference between these two numbers if both of them have two digits?	23
9	The number two thousand fourteen has four digits. What is the least number of years after two thousand fourteen in which a year will occur that uses all four of these same digits?	27 [years]
10	Find the area in square centimeters of the smallest rectangle in which I could draw two congruent circles of radius three centimeters with no overlap.	72 [sq cm]

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4th Grade – May 17, 2014

COLLEGE KNOWLEDGE BOWL ROUND #6 – SET 6

#	Problem	Answer
1	It takes Gene three minutes to read one page of his history book. At this rate, how many minutes would it take him to read seven pages of his history book?	21 [minutes]
2	Miya drew a regular polygon with perimeter one-hundred seventy-seven inches. If each side was between fifty and sixty inches long, how many sides did her polygon have?	3 [sides]
3	How many cups are in twenty-seven quarts?	108 [cups]
4	What is the largest **odd** counting number that will divide into sixty with no remainder?	15
5	What is the area in square meters of a rectangle with side lengths of three meters and six meters?	18 [sq meters]
6	When four copies of the number five are multiplied together, what is the ones-place digit of the product?	5
7	I am thinking of a counting number with two digits, both **even**. The product of the digits is less than ten. What is the largest my number could be?	80
8	When five thousand is multiplied by six thousand, how many zeros would it take to write the product?	7 [zeros]
9	Penelope had eighty-two cents in standard U.S. coins, with no coin worth more than forty cents. After she lost two coins, she had sixty-seven cents left. What was the smallest number of coins Penelope could have had to start with?	8 [coins]
10	If four more than **my** number is 15 less than **your** number, and six more than **your** number is thirty-eight, what is **my** number?	13

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4th Grade – May 17, 2014

COLLEGE KNOWLEDGE BOWL ROUND – EXTRA

#	Problem	Answer
1	What is the difference between twice sixteen and half of sixteen?	26
2	Tamara multiples three different prime numbers together and gets a product of forty-two. What is the sum of Tamara's three prime numbers?	12
3	What is HALF of HALF of HALF of seventy-two?	9

Final Score:

KEY

(Out of 8)

"Math is Cool" Masters -- 2013-14

School:_____ Room # _____ Team #_____

Name: _____Proctor: _____

4th Grade **Mental Math** – 30 sec per question

8 problems read orally to everyone - Approximately 8% of Individual Score - 25% of team score

You may NOT be seated next to anyone from your school. If you are MOVE NOW to avoid being disqualified! 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.*

	Answer	1 or 0	1 or 0
1	202 [cm]		
2	18 [tangerines]		
3	37		
4	13		
5	25 [squares]		
6	11 [quarters]		
7	10:44 PM		
8	175		

"Math is Cool" Masters – 2013-14

4th Grade – May 17, 2014

School Name____ _____Team #_____

Proctor Name_____Room #_____Division: _____

Final Score: KEY

First Score

(out of 20)

Team Multiple Choice Contest – 15 minutes – 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.***

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	B		
3	C		
4	D		
5	A		
6	B		
7	D		
8	A		
9	B		
10	C		

"Math is Cool" Masters – 2013-14

4th Grade – May 17, 2014

School Name_____Team #_____

Proctor Name_____Room #_____Div: _____

Final Score: KEY

First Score

(out of 10)

Team Contest – Score Sheet – 15 minutes – 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 a 1 or 0. Record all answers on the colored answer sheet.

DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1	32 [inches]		
2	2 [giga-pies]		
3	103 [coins]		
4	17		
5	9 [members]		
6	86		
7	74070		
8	56		
9	7:30 [AM or PM unnecessary, and wrong]		
10	27		

"Math is Cool" Masters -- 2013-14

KEY

4th Grade – May 17, 2014

School:_____Team #_____

Proctor: _____ Room #_____Div _____

RELAY # 1

Answer for person # 1	Answer for person # 2	Answer for person # 3	Answer for person # 4
8 [cows]	**2**	**[x=] 6**	**50 [nickels]**
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
10 [feet]	**15**	**90**	**27[°]**
1 or 0	1 or 0	1 or 0	2 or 0

Final Score:

(Out of 8)

"Math is Cool" Masters -- 2013-14

School:_____ Room # _____ Team #_____

Name: _____Proctor: _____

4th Grade **Mental Math** – 30 sec per question

8 problems read orally to everyone - Approximately 8% of Individual Score - 25% of team score

You may NOT be seated next to anyone from your school. If you are MOVE NOW to avoid being disqualified! 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.*

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

"Math is Cool" Masters – 2013-14

4th Grade – May 17, 2014

School Name____ _____Team #_____

Proctor Name_____Room #_____Division: _____

Final Score:

First Score
(out of 20)

Team Multiple Choice Contest – 15 minutes – 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.***

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DO NOT WRITE IN SHADED REGIONS

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

"Math is Cool" Masters – 2013-14

4th Grade – May 17, 2014

School Name_____Team #_____

Proctor Name_____Room #_____Div: _____

Final Score:

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			