"Math is Cool" Championships – 2007-08

Sponsored by: IEEE - Wenatchee Section

Geometry – December 7, 2007

Individual Contest

Tear this sheet off and fill out top of answer sheet on following page prior to the start of the test.

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 rounded to the nearest cent.*
  - *Express all rational, non-integer answers as reduced common fractions.*
- *All radicals must be simplified and all denominators must be rationalized.*
- *Units are not necessary unless it is a problem that deals with time and in that case, a.m. or p.m. 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 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 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 1 or 0. Record your answers on the score sheet. No talking during the test. You will be given a 5 minute time warning.

"Math is Cool" Championships – 2007-08

Sponsored by: IEEE - Wenatchee Section

Geometry – December 7, 2007

Individual Contest

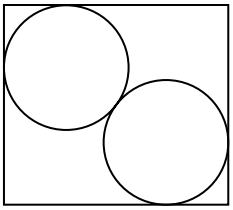
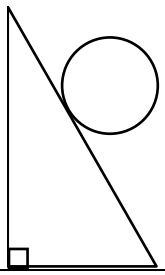
1	Find the sum of $\frac{1!}{4}+\frac{2!}{3}+\frac{3!}{2}$, and give your answer as a mixed number.
2	What is $1\frac{1}{4}$ expressed as a percent?
3	What is the positive difference between rounding the following number to the nearest hundred and rounding it to the nearest ten? If your answer is not an integer, give it as a decimal. 326.049
4	What is the largest prime factor of 495?
5	The radius of a spherical orange is 2 inches. An ant is standing at point A. Point B is at the opposite side of the sphere from point A. How many inches are in the shortest possible path which begins and ends at point A, follows the peel of the orange, and passes through point B at least once?
6	Let the letters a, b, c and d have the following values. a = $\sqrt{9.61}$ b = π c = $\sqrt{10}$ d = $\frac{22}{7}$ Write the letters a, b, c and d in order from least to greatest value.
7	Evaluate: 897 x 903
8	What is the difference between the largest and smallest positive integer factors of 210?
9	A line passes through the points (3,4) and (4,3). As an ordered pair, (x,y), what are the coordinates of the point where the line crosses the y-axis?
10	Evaluate: $\left(5^9\right)^{\frac{1}{3}}$
11	Mickey walks 18 yards in a straight line across a field. He then turns around and kicks a soccer ball in a parabolic arc through the air back toward where he started. If he manages to kick the ball so that it bounces exactly at his starting point, how many yards are in the horizontal distance traveled by the ball when it is at its highest point?
12	A fish tank in the shape of a rectangular prism has length 16, width 12 and height 11 inches. The manufacturer recommends keeping the water level of the tank 1 inch below the top. Georgia has 3 goldfish, each with a volume of 2 cubic inches. How many cubic inches of water should Georgia put in the tank, assuming she meets the manufacturer's recommendation?
13	Evaluate: $12012_3 + 101_2$ in base 10

14	A middle school has 960 students. The ratio of eighth graders to seventh graders is 9:7, and of the eighth graders, the ratio of boys to girls is 7:11. Of the seventh graders, the ratio of boys to girls is 13:8. What is the ratio of eighth grade boys to seventh grade girls? Express your answer as m:n, where m and n are integers with no common factors (other than 1).
15	A six-foot-tall woman is standing 30 feet from a streetlight, which causes her shadow to be 12 feet long. How many feet tall is the streetlight?
16	Dexter is mixing chemicals in his lab. If he has 800 grams of a mixture that is 30% radium and 70% curium, how many grams of pure radium must he add to make the mixture 40% curium?
17	The geometric mean of two positive integers is the positive square root of their product. For positive integers a and b, their geometric mean is 10 and their arithmetic mean (average) is an integer. What is the largest possible difference between a and b?
18	The same number is added to both the numerator and the denominator of the fraction $\frac{3}{4}$ to create a new fraction. The product of $\frac{3}{4}$ and this new fraction is 1. What is the number added?
19	Scooby, Shaggy, and Scrappy are ordering lunch. Scooby bought 11 hamburgers and 5 milkshakes for $35, Shaggy bought 9 hamburgers and 7 milkshakes for $33, and Scrappy bought 2 hamburgers and 2 milkshakes. How much, in dollars, did Scrappy pay?
20	Three standard dice are rolled. The sum of the top faces is 9. What is the probability that all three dice have the same number on their top faces?
21	Two dozen widgets have a total cost of $\$\underline{a}.9\underline{b}$, where $\underline{a}$ and $\underline{b}$ stand for digits, not necessarily different. Each widget costs the same whole number of cents. What is the greatest possible cost, in cents, of each widget?
22	One event at a math contest is the Topic Test, for which each participant is randomly assigned one topic from four possibilities (algebra, arithmetic, geometry, probability). What is the minimum number of Columbia Middle School Math Team members who must participate to guarantee that at least 3 team members take the same topic test?
23	How many <u>ordered</u> triples (a, b, c) exist such that a, b, and c are positive integers and the product abc = 36?
24	Point P is translated 4 units left and 2 units up, and then reflected over the line $y = -x$. The final image point resulting from these transformations has coordinates (7, -3). As an ordered pair (x, y), what are the coordinates of the original point P?
25	Mary walks into a casino and bets $50 in a game called Shenanigans. In Shenanigans, there are four possible outcomes. There is a $\frac{1}{10}$ chance that Mary wins her money back plus $50 more. There is a one-quarter chance that she wins her money back plus $25, and there is a 30% chance that she breaks even (gets her bet money back but nothing else). The last possibility is that Mary loses all her bet. On average, how many dollars would Mary gain or lose each time she bets $50? If she gains, your answer will be positive, and if she loses, your answer will be negative.

26	From an urn with only green and blue marbles in it, one marble is selected at random. The probability that a blue marble is chosen is $\frac{3}{5}$ of the probability that a green marble is chosen. What is the probability that a green marble is chosen?
27	Let $a@b=\frac{a+b}{ab}$. If $(2@x)@4=1.25$, what is x? If your answer is not an integer, express it as a fraction.
28	Emily has 2 cats (Gato and Tiger) and 3 dogs (Fido, Rover, and Spot), but has set out a row of only 4 food bowls, all containing the same pet food. How many ways are there to arrange 4 animals at the food bowls (one animal per bowl), if 2 of the animals must be Gato and Tiger?
29	Tony jumps out of a plane. His height from the ground (h) is given by the formula $h=-16t^2+1024$, where h is in feet and t is time in seconds. How many seconds will it take Tony to hit the ground?

Challenge Questions

30	Jasmine wears three bracelets every day. How many different bracelets would she need in order to wear a different set of bracelets every day for a year? (Two sets are different if any of their members are different, without regard to order.)
31	Solve for x: $\lvert x+5\rvert<15+(-3)$
32	What is the area of the circle with the equation $x^2 + 2x + y^2 - 6y = 49$?
33	Zeus could bench-press 340 pounds last week. This week he can bench-press 380 pounds. If, every week, he improves by a number of pounds equal to three-quarters of the previous week's improvement, and if Zeus lives forever, what is the maximum number of pounds Zeus will be able to bench-press?
34	Indiana Jones needs to cross a 12-foot wide pit in the ground. There is an overhanging tree limb 16 feet above ground level, directly above the middle of the pit. By standing on tiptoe and stretching out his arm above his head, Indiana reaches 8 feet straight up in the air (above ground level) and is still able to grip his whip. In order to hold his weight, 12 inches of the whip must wrap around the tree limb. How many feet long must his whip be in order for Indiana to use his whip in this way to cross the pit?
35	Trevor wants to photograph a badger from at most 200 yards away. Trevor is running towards the badger at fifteen yards per second. He needs six seconds standing still before he can take the picture. The badger is 300 yards from Trevor and running away at five yards per second. After how many seconds can Trevor photograph the badger?

36	Two congruent circles of radius 4 cm are inscribed in a square as shown. What is the number of square centimeters in the area of the square? 
37	Three points (P, Q, and R) are marked on a number line, with $P < Q < R$. If $P + R = 0$, then give the letters of all of the following 5 statements that must be true. a) $Q = \frac{P+R}{2}$ b) $P < Q < 0$ c) $\lvert P \rvert > Q$ d) $R - Q > P + Q$ e) $P \cdot Q < R \cdot Q$
38	What is the maximum area, in square units, of any rectangle that can be inscribed in a regular hexagon of side length 7 units?
39	Ms. Henderson has 10 boys and 14 girls in one of her math classes. Students are assigned to seats at one of six tables in the classroom. Ms. Henderson randomly assigns 2 boys and 2 girls each to tables one through five. The four remaining girls are assigned to table six. What is the probability that Morelle, Gwyn, Sonja and Christine get to sit together at table six?
40	A circle of radius 2 inches rolls along the entire perimeter of a right triangle with sides 8, $8\sqrt{3}$ and 16 inches. How many inches are traveled by the center of the circle? 

"Math is Cool" Championships – 2007-08

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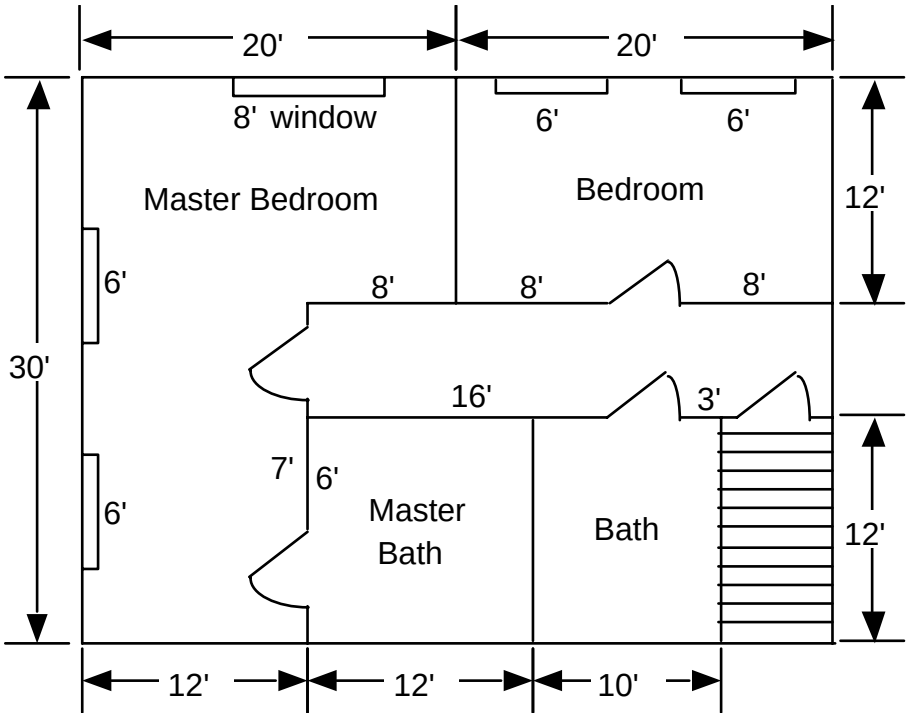
8th Grade – December 7, 2007

Individual Multiple Choice Contest

Mrs. Copernicus wants to have the upstairs of her house painted, not including the stairs, windows, doors, walking surface or ceiling. She decides to hire Joel, an excellent painter to do the job for her. The blueprint of the upstairs of her house is shown below:



1	How many square feet are in the master bedroom of this house? A) 336 B) 360 C) 456 D) 600 E) answer not given
2	Mrs. Copernicus installed the five 4 foot tall windows when her house was built. With these specifications, how many square feet of windows are there on this story? A) 80 B) 96 C) 120 D) 128 E) answer not given
3	Painters follow the 4-to-1 rule with ladders. This rule states that for every 4 feet long your ladder is, you must place the base 1 foot away from the base of the wall on which you are working. Following this rule, how high would the tip of a 20 foot ladder be when leaned against a wall? A) 15 feet B) 16 feet C) 18 feet D) 20 feet E) answer not given

4	Joel wants to lay a piece of cloth over the staircase so no paint is spilled on the new carpeting. Joel must make sure that the cloth is in contact with the stairs at every point (horizontal and vertical sections) so that no one can trip over the cloth. How many square feet of cloth does Joel need to cover the entire staircase if every story in the house is 8 feet tall? A) 48 B) 72 C) 96 D) 168 E) answer not given
5	Mrs. Copernicus has her favorite floor mat in her unfinished master bathroom. The mat is circular with a radius of 6 feet. Joel accidentally drips a drop of paint from the top of his ladder. If the paint drop lands randomly, what is the probability it doesn't hit Mrs. Copernicus' mat? A) $\frac{\pi}{4}$ B) $\frac{\pi}{2}$ C) $\frac{4-\pi}{4}$ D) $\frac{4-\pi}{2}$ E) answer not given
6	The walls will be painted in a color called tavern green, which is made by mixing 3 parts green paint with 2 parts black paint. One of Joel's coworkers accidentally mixed 3 parts black with 2 parts green. Joel can only mix 5 gallons at a time in his mixer and wants to use the failed mixture. He will pour the proper amount of green paint into a five gallon drum and then top off the drum with the improperly mixed paint. How much green paint should he pour into the 5 gallon drum? A) 1 gal. B) $1\frac{1}{3}$ gal. C) $1\frac{2}{3}$ gal. D) 2 gal. E) answer not given
7	Joel charged Mrs. Copernicus by the hour. Joel told her that his hourly rate was the smallest number of dollars that left a remainder of 1 when divided by 7, a remainder of 4 when divided by 5 and a remainder of 12 when divided by 13. If it took Joel 9 hours to complete the job, how much does Mrs. Copernicus owe him? A) \$261 B) \$387 C) \$576 D) \$3,897 E) answer not given
8	Tim starts off the day painting 200 square feet an hour, but as the day wears on he begins to get tired and hungry and paints 10 percent slower every half-hour he paints. If Tim were able to paint forever, how many square feet could he paint? A) 1,000 B) 1,600 C) 2,000 D) 3,000 E) answer not given
9	Joel is painting one of the 12 foot walls in the master bedroom. He is using a roller with a radius of $3/\pi$ inches and that is 8 inches long. If Joel does not overlap with the roller, how many times will the roller spin while covering the wall? A) 16 B) 144 C) 192 D) 288 E) answer not given

"Math is Cool" Championships – 2007-08

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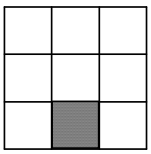
8th Grade – December 7, 2007

Team Contest

1	Line segment AB is 50% longer than segment BC, and segment CD is 20% longer than segment BC. Then segment AB is what percent longer than segment CD?
2	Suman's mystery number is n. When Suman subtracts a certain integer x from n, he gets 37. When he adds that same integer x to n, he gets 129. What should Suman get when he multiples x times n?
3	Find the sum of all whole number values of n for which $2^n + 3^n$ has $n-2$ digits.
4	Skip and Tara both correctly evaluate the same arithmetic problem to get a positive fraction less than 1. Next, they are instructed to simplify the fraction and then record the sum of the numerator and denominator of the simplified fraction. However, neither Skip nor Tara fully reduced the fraction before adding the numerator and denominator. Skip got 12 as his sum and Tara got 20 as her sum. What is the correct sum? Give all possible answers.
5	Four different numbers (A, B, C, and D) are chosen from the following list: 1, 3, 7, 10, 13, 16. In simplest fraction form, what is the smallest positive value of $\frac{A-B}{C-D}$?
6	A 3 by 3 grid of unit squares has one unit square shaded, as indicated. What fraction of all rectangles that can be drawn following the lines of this diagram will have no shading on them? 
7	A piece of toast is in the shape of a rectangular prism with length 5 inches, width 3 inches and height 0.5 inches. It has butter on one of its two largest surfaces. If the toast falls on the floor, then the probability of landing on any one of the 6 faces of the prism is determined by the ratio of the area of that face to the total surface area of the prism. What is the probability that the toast lands butter-side down?
8	A watch set correctly at 8 AM shows 11:40 AM when it is actually noon that same day. When the watch next shows 3 PM, how many minutes past 3 PM is it really? If your answer is not a whole number, give it as a mixed number.
9	The number of diagonals that can be drawn in polygon A is half the number that can be drawn in polygon B. Neither polygon has more than 20 sides. How many sides does polygon A have?
10	If $a+b=1$, $c+d=2$, $e+f=3$, and so on through the entire alphabet, evaluate the sum of a + b + c + . . . + x + y + z.

"Math is Cool" Championships – 2007-08

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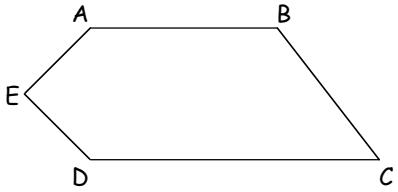
8th Grade – December 7, 2007

Pressure Round Contest

1	My calculator (which I call Hal) has a mind of its own. If I enter an even digit other than 0, it changes the digit by subtracting 1. If I enter an odd digit other than 9, it changes the digit by adding 1. (It does not change either 9 or 0.) The calculator then performs operations correctly on the changed entries and displays the result unchanged. When I enter two 2-digit positive integers and multiply them, Hal shows the product 578. What is the correct product of the two numbers I entered?
2	How many 2-digit positive integers are greater than the product of their digits?
3	A bag contains 4 red, 3 white, and 2 blue marbles. What is the probability that when two marbles are drawn, at least one of them is blue?
4	Find the area of the pentagon (in square units), given that AB and DC are parallel, AB = 8, DC = 12, angle E = 90°, AE = ED, and AB = (2)(AE). 
5	How many years after 2007 will it be until the next year with the same number of positive integer factors as 2007?

"Math is Cool" Championships – 2007-08

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8th Grade – December 7, 2007

Mental Math Contest

PERSON 1		
1.1	If the integers one through eleven were written out, how many total digits would be written?	13 [digits]
1.2	Subtracting 82 from 197 gives the same answer as multiplying what number by 5?	23
1.3	The geometric mean between two numbers is the square root of their product. What is the geometric mean of 6 and 24?	12
1.4	What is the difference between the largest and smallest prime factors of 126?	5
PERSON 2		
2.1	What is the quotient of the sixth positive even integer and the first prime number?	6
2.2	What is the distance between the point one comma eight and the point nine comma twenty-three?	17 [units]
2.3	By adulthood the head is one-eighth of a person's height. Wolfgang is an adult who is 200 centimeters tall. How many centimeters long is he from the neck down?	175 [cm]
2.4	What is the lateral surface area of a cone with base radius of 3 inches and height 4 inches?	15π [inches^2]
PERSON 3		
3.1	Solve for x: three x plus seven equals one hundred	$x = 31$
3.2	What are the odds in favor of drawing an ace or a black card from a standard deck of cards?	7:6, 7/6 or 7 to 6
3.3	A microsecond is a millionth of a second. How many seconds are in one billion microseconds?	1000 [seconds]
3.4	Joel wrote 16 problems on Monday, and half as many on Tuesday. If he continues writing half as many as on the previous day, on what day of the week will he write exactly one problem?	Friday
PERSON 4		
4.1	How many ways can you create a committee of four workers from a group of seven?	35 [ways]
4.2	Biff and Eho are driving from Pullman to Seattle. On the way there, they average 60 miles per hour. On the return trip, traveling by the exact same route, they average 20 miles per hour. What is their average speed in miles per hour for the entire trip?	30 [mph]
4.3	A cylindrical log has a length of 10 feet and a radius of 12 inches. What is the surface area of the log in square feet?	$22\ \pi$ [ft^2]
4.4	What is the median of the first 8 positive even integers?	9

"Math is Cool" Championships – 2007-08

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8th Grade – December 7, 2007

COLLEGE KNOWLEDGE BOWL ROUND #1

#	Problem	Answer
1	Today is Macey's birthday. Her brother is one third of her age. When Macey is a quarter of a century old, her brother will be three-fifths of her age. How many candles should be on Macey's cake today?	15 [candles]
2	In ten hours, how many more degrees does the minute hand of a clock travel than the hour hand?	3300 [°]
3	Half of my number is six less than twice my number. What is my number?	4
4	The year 2007 was the 300^{th} anniversary of the birth of the Swiss mathematician Leonhard Euler [pronounced "OILER"]. Euler made one of his important mathematical discoveries in a year that was a perfect square. What was that year?	1764
5	The average of six consecutive even integers is 1. What is the smallest of these integers?	-4
6	Subtracting 629 from 2007 gives the same answer as multiplying what number by 53?	26
7	The perimeter of a rectangle is twenty-eight inches. The length of the rectangle is two inches greater than its width. Find the area of the rectangle in square inches.	48 [sq in]
	Extra Problem – Only if Needed	
8	What is the product of all integers whose absolute value is less than or equal to 5?	0

"Math is Cool" Championships – 2007-08

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8th Grade – December 7, 2007

COLLEGE KNOWLEDGE BOWL ROUND #2

#	Problem	Answer
1	There are humans and dogs on the lawn of a park. If you see 8 heads and 22 feet, what is the probability that two creatures selected at random will both be human?	$\frac{5}{14}$
2	Mama Baboon eats 19 bananas per half-hour and Baby Baboon eats half a banana every five minutes. If all baboons eat at a steady rate, how many bananas would Papa Baboon have to eat per hour in order for the three of them to eat 150 bananas in an hour and a half?	56 [bananas]
3	What integer is closest to the area (in square units) of an equilateral triangle of side length 4 units?	7 [sq units]
4	Three congruent rectangles, each 8 inches by n inches, are put together with their sides lined up to form one new, larger rectangle. The perimeter of this new rectangle is 34 inches. What is n?	3 [inches]
5	The following equation has no parentheses: four minus three times six equals x minus 35. What is x?	21
6	What is the smaller angle between the hour and minute hands of a clock at 8:24pm?	108 [degrees]
7	A glacier and a tectonic plate are racing. The glacier moves one inch per year while the tectonic plate moves three inches per year. After how many years will the tectonic plate have moved a mile more than the glacier? Express your answer in scientific notation.	Three point one six eight times ten to the fourth. [years]
	Extra Problem – Only if Needed	
8	In counting backwards from 1000 by sevens, what is the largest number less than 900 that you would say?	895

"Math is Cool" Championships – 2007-08

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8th Grade – December 7, 2007

COLLEGE KNOWLEDGE BOWL ROUND #3

#	Problem	Answer
1	How many one-digit or two-digit prime numbers have no digits other than 1, 2, or 3?	6 [primes]
2	An acre is 43,560 square feet. How many acres are in a square mile?	640 [acres]
3	What is the product of 5 consecutive numbers which sum to 15?	120
4	If a dog ran five times further than its master, how far in miles did the master run if they ran for 72 miles combined?	12 [miles]
5	If two nachos equal three doodles and four doodles equal one frito, how many nachos equal twelve fritos?	32 [nachos]
6	I'm thinking of an integer greater than 10 and less than 100. When it is divided by 4, the remainder is 3. When it is divided by 5, the remainder is 2. When it is divided by 6, the remainder is 1. What is the integer?	67
7	David is evaluating 3 to the x power. What is the sum of all the possible units digits for his answer if x is always an integer?	20
	Extra Problem – Only if Needed	
8	Cam is running a race. He must pass 6 people in order to get into first place and he uses up 18 calories to pass each one. What is the difference in the number of calories required for him to win the race and the number required to get in third place?	36 [calories]

"Math is Cool" Championships – 2007-08

Geometry – December 7, 2007

School Name_____Team #_____

Proctor Name_____Room #_____

Final Score:

KEY

First Score

STUDENT NAME_____

Individual Contest – Score Sheet

DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1	$3\frac{11}{12}$		
2	125 [%]		
3	30		
4	11		
5	4π [in]		
6	a, b, d, c		
7	809991		
8	209		
9	(0,7)		
10	125		
11	9 [yds]		
12	1914 [in^3]		
13	$145_{[10]}$		
14	21:16		
15	21 [feet]		
16	600 [grams]		
17	48		
18	-7		
19	[$] 8 or [$] 8.00		
20	1/25		

	Answer	1 or 0	1 or 0
21	33 [cents]		
22	9 [members]		
23	36 [triples]		
24	(7, -9)		
25	[$] -6.25		
26	5/8		
27	[x=] 2		
28	72 [ways]		
29	8 [sec]		
30	15 [bracelets]		
31	$-17 < x < 7$ or (-17,7)		
32	59π [$units^2$]		
33	500 [pounds]		
34	11 [ft]		
35	19 [seconds]		
36	$96 + 64\sqrt{2}$ [cm]		
37	c, d		
38	$49\sqrt{3}$ [un^2]		
39	1/1001		
40	$4\pi + 24 + 8\sqrt{3}$ [in]		

"Math is Cool" Championships – 2007-08

8th Grade – December 7, 2007

School Name_____Team #_____

Proctor Name_____Room #_____

STUDENT NAME_____

Final Score
KEY

First Score

(out of 18)

INDIVIDUAL 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. It is not necessary to write your personal name on the test, but you may put it at the bottom of the test so your coach will be able to give you back the correct test. This test is taken individually, but it is part of your team score, including zeros for missing team members. Your team score will be calculated by taking the mean of your four team members' scores. When you are prompted to begin, tear off the colored sheet and begin testing. ***Since this is a multiple choice test, ONLY a letter response should be indicated as an answer on the answer sheet.*** *No talking during the test.*

DO NOT WRITE IN SHADED REGIONS

	Answer	-1, 0 or 2	-1, 0 or 2
1	C		
2	D		
3	E ($5\sqrt{15}$ feet)		
4	E (120 ft^2)		
5	C		
6	C		
7	C		
8	A		
9	D		

"Math is Cool" Championships – 2007-08

8th Grade – December 7, 2007

School Name_____Team #_____

Proctor Name_____Room #_____

STUDENT NAME_____

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 ***2 or 0****. Record all answers on the colored answer sheet.*

DO NOT WRITE IN SHADED REGIONS

	Answer	2 or 0	2 or 0
1	25 [%]		
2	3818		
3	9		
4	4		
5	$\frac{1}{5}$		
6	2/3		
7	$\frac{15}{38}$		
8	$38\frac{2}{11}$ [min]		
9	9 [sides]		
10	91		

First Score

"Math is Cool" Championships – 2007-08

8th Grade – December 7, 2007

School Name_____Team #_____

Proctor Name_____Room #_____

STUDENT NAME_____

PRESSURE ROUND - 10 minutes

When it is time to begin, you will be handed a packet of questions. There is a copy of the questions for each team member. Two minutes after the start of the test you are expected to submit an answer for one of the questions (it can simply be a guess). The maximum value of this answer is 1 point. In another two minutes you are expected to submit another answer to one of the four remaining questions; its maximum value is two points. This process will continue until all the questions are answered and each consecutive question's worth will go up by one point. You must submit your answers on the colored sheets given to you. If you do not have an answer at the end of a two minute period, you must still submit an answer sheet with an identified question number on it. Failure to do so will result in loss of points. This event is timed, and you will be given a verbal 5 second warning and told to hold your answer sheet up in the air. You may keep working as the sheets are collected.

Pressure Round Answers

	Answer
1	1204
2	90 [integers]
3	$\frac{5}{12}$
4	$8 + 40\sqrt{2}$ [units^2]
5	2 [years]