"Math is Cool" Masters – 2010-11
PreAlgebra, Algebra & Geometry

December 11, 2010
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.*
  - *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

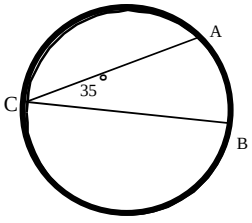
You may NOT be seated next to anyone from your school. If you are MOVE NOW to avoid being disqualified! When you are prompted to begin, tear off the colored sheet and begin testing. Make sure your name and school are recorded on the answer sheet. The raw score will be 2 points for correct answers to 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 – 2010-11

PreAlgebra, Algebra & Geometry

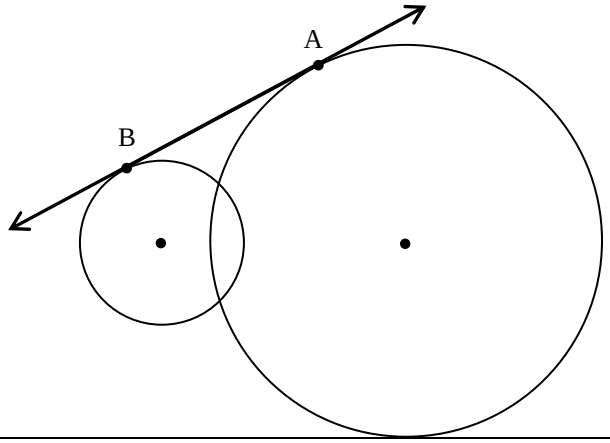
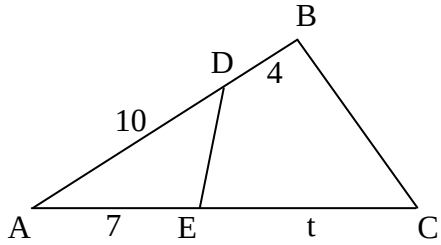
December 11, 2010

Individual Contest

Questions 1-30: 2 points each	
1	Find the following sum: $832 + 721 + 129 + 678$
2	Simplify and evaluate: $5 + 3(2 - 7(5 - 11)) - 2 + 5$
3	Write $\frac{11}{16}$ as a decimal rounded to two decimal places.
4	Find $\frac{6}{7}$ of 48. If your answer is not a whole number, express it as an improper fraction.
5	Evaluate: xy + 2m if x = 2, y = 4 and m = 3.
6	210 is increased by 25%. What is the resulting number? If your answer is not a whole number, express your answer as a decimal.
7	Simplify by adding like terms: $3a^2b^3 - 5aabb^2 + 7a^2bbb$
8	What is the least common multiple of 16, 15 and 21?
9	Evaluate: $a^2 + b^2$ when a = -2 and b = -3
10	Evaluate: $\sqrt[3]{125}$
11	The area of a trapezoid is 48 square units. What is the height of the trapezoid if the two bases are 10 and 22 units in length?
12	What is the slope of the line 3x + 4y = 2?
13	Find the measure, in degrees, of minor arc AB. The measure of angle ACB is 35°. 
14	The length of one leg of a right triangle is 9ft and the length of its hypotenuse is 15 feet. What is the length in feet of the other leg?
15	The length of one diagonal in a rectangle is 11 inches. What is the length in inches of the other diagonal?

16	On a certain UN subcommittee, Ghana has one member, Portugal has two, and Saudi Arabia has three. When they preside over a meeting, they sit in a row, with all members from a country sitting next to each other. In how many ways can they do this?
17	How many positive integer factors of 84 are also factors of 120?
18	Solve for x: $3 - 2(5x - 3) + 2 = 5(7 - 3x) + 1$
19	A quadrilateral with sides measuring 4, 5, 6, and 7 m has an area of 18 m^2 and is similar to a second quadrilateral with two sides measuring 9 and 6 m. What is the area, in square meters, of this second quadrilateral?
20	If $3a + 2b = 7$ and $5a - 3b = -1$ then find the value of $a + b$.
21	Factor: $x^2 + 16x - 17$
22	How many distinguishable arrangements are there for the letters in "LEFFEL"?
23	Find the median of the following data set. {2, 11, 5, 17, 55, 3, 5, 10, 12}
24	Express the positive difference between the base-seven numbers 4213_7 and 1234_7 as a base-seven number.
25	How many cubic inches are in 15 cubic feet?
26	Find the equation in slope-intercept form of the line passing through (-3,2) and (2, 12).
27	A researcher visits a pond and captures and marks 20 fish. On a return visit the next day, the researcher captures 32 fish, and 10 of them are marked from the previous day. Estimate the number of fish in the pond.
28	How many ways can you choose three people, from a group of seven people, to rake leaves?
29	The circumference of a circle is 16π in^2. What is the number of square inches in the area of the circle?
30	Evaluate: $64^{\frac{2}{3}}$

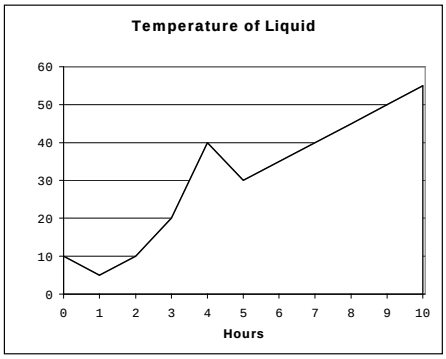
Challenge Questions: 3 pts each

31	What is the third term of a harmonic sequence with a first term of 8 and a second term of 5? A harmonic sequence is one where each term is the reciprocal of the corresponding term of an arithmetic sequence.
32	You are currently at the point (1, 3) in the Cartesian plane, and wish to travel to the point (-2, 7) by making exactly seven one-unit steps, each of which is either horizontal or vertical. How many paths could you follow?
33	A set of twelve nonnegative integers has a median of 8, a mode of 3, and a mean of 9. What is the greatest possible range for the data set?
34	When $(4u-3)^5$ is expanded and like terms are combined, what is the coefficient of the u^2 term?
35	A circle with radius 5 cm overlaps a circle with radius 12 cm so that their centers are 13 cm apart. A line is drawn tangent to both circles as shown. What is the length of segment AB, in centimeters? 
36	In the figure shown, where $m\angle ADE = m\angle ACB$ and all given lengths are in meters, what is the value of t? 
37	In a certain card game, you pay \$3 to draw one card. If it is a spade, you get \$10. If it is any other suit, you get \$1. What is the expected number of dollars you would gain by playing this game? Express your answer as a decimal rounded to the nearest hundredth (cent). If you would expect to lose money, your answer should be negative.
38	How many even factors does the number 2310 have?
39	Evaluate: $\cfrac{4}{5+\cfrac{4}{5+\ldots}}$
40	Donna picks a random weekday (Monday through Friday) in July or August to go to the dentist. As a reduced fraction, what is the greatest probability for any possible year that she will go to the dentist on a Monday?

"Math is Cool" Masters – 2010-11

7th Grade – December 11, 2010

Individual Multiple Choice Contest



FOR QUESTIONS 1, 2 and 3, please refer to the following chart:

The graph at left records the temperature of a strange liquid over a ten-hour time period. After exactly one hour, the temperature of the liquid was 5°C.

1 At which time below was the temperature increasing at the fastest rate?

A) 0.5 hours B) 3.5 hours C) 4.5 hours D) 5.5 hours E) 8.5 hours

2 Sampson noticed a trend develop starting at hour 5 and continuing until the end of the 10^{th} hour. If this trend had continued and Sampson had measured the temperature at the end of the 15^{th} hour, what temperature would he have measured?

A) 55 °C B) 75 °C C) 80 °C D) 85 °C E) 100 °C

3 What was the average temperature of the liquid in degrees C for the first four hours of the experiment?

A) 12.5 °C B) 15 °C C) 17.5 °C D) 20 °C E) Answer not given

Consider the following operations for problems 4, 5, & 6:

$A\#B = A/B$

$A®B = 2(A+B+1)$

$A◊B = A^2 + B^2$

4 Evaluate 3.5®5.5

A) 3/5 B) 9 C) 10 D) 20 E) 42.5

5 Evaluate: 3®(50#(4◊3))

A) 6 B) 12 C) 338.5 D) 738 E) Answer not given

6 A function Θ is considered to be associative if $A\Theta(B\Theta C)=(A\Theta B)\Theta C$ and is considered to be communicative if $A\Theta B = B\Theta A$. With these definitions, which of the functions are BOTH communicative and associative.

A) ® B) #,® C) ◊ D) All three operations E) None of these operations.

USE THIS TABLE FOR PROBLEMS 7, 8, & 9

Die name	P(1)	P(2)	P(3)	P(4)	P(5)	P(6)
Die A	1/6	1/6	1/6	1/6	1/6	1/6
Die B	1/3	0	1/6	1/6	0	1/3
Die C	0	0	1/2	1/2	0	0
Die D	0	1/3	1/6	1/6	1/3	0

Delilah has four cubical dice labeled A, B. C, and D. All are equally likely to land on any side. However, some have multiple sides with the same number (and lack some numbers all together). The table above shows the probability of rolling a specific number with a die, where P(x) is defined to be the probability of rolling a number x. (For example: the probability of rolling a 2 with die D is 1/3.)

7 Delilah rolls die A and die B. What is the probability she rolls "snake eyes" (that is, both dice show the number 1)?

A) 1/18 B) 1/36 C) 1/9 D) 0 E) Answer not given

8 Delilah rolls each die two times and adds the values of the two rolls. Which of the four dice have the same probability of rolling a sum of seven?

A) A and B B) A,B, and C C) B,C, and D D) B and D E) A, B, C, and D

9 Delilah picks a die at random. She rolls it two times and multiplies the resulting two numbers together to get a product of ten. What is the probability that she picked die D?

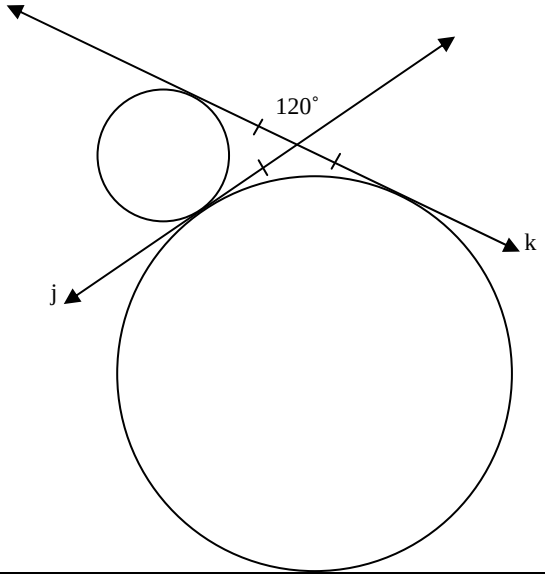
A) 0% B) 20% C) 50% D) 80% E) 100%

10 In the figure below, a smaller circle and a larger circle are externally tangent to each other and to line j at the same point. Additionally, each circle is tangent to line k, as shown. What is the ratio of the area of the larger circle to the area of the smaller circle?

A) 6:1 B) 7:1

C) 8:1 D) 9:1

E) 10:1



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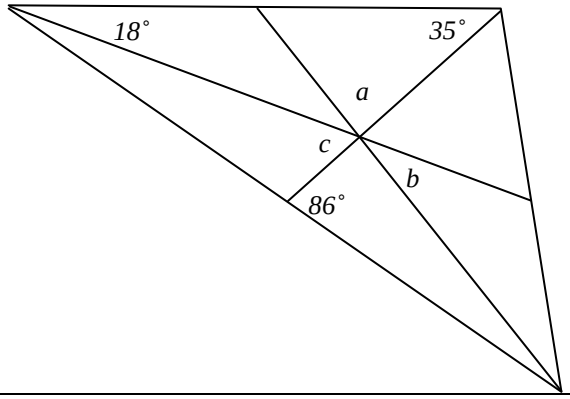
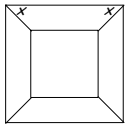
7th Grade – December 11, 2010

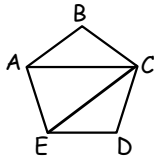
Team Contest

1	Simplify $\cfrac{2}{3+\cfrac{2}{5+\cfrac{1}{2}}}$. Your answer should be a reduced common fraction.
2	A number is chosen at random from the first 50 positive integers. What is the probability that it is a square or a multiple of 3 (or both)?
3	The proper factors of an integer n are all its positive integer factors except n itself. Find the sum of the proper factors of the sum of the proper factors of 8.
4	A photocopy shop sells pre-paid cards to use in their self-service copy machines. Each page copied deducts 8¢ for a copy on letter-size paper or 11¢ for a copy on legal-size paper. A card has the value of $2.00 and is used up exactly. Find the largest number of copies that could have been made, given that at least one copy is legal-sized.
5	In the triangle shown at right the three medians are drawn and they intersect at one point. A median is a segment that connects a vertex to the midpoint of the opposite side. What is the sum of the measures of the angles labeled *a*, *b* and *c*? 
6	The outer square shown in the figure (not to scale) has an area of 12.25 square cm. The four trapezoids are congruent, with altitude 1.5 cm and $\angle x = 45°$. Find the number of cm in the perimeter of the inner square. 
7	Bob borrows $40,000 (called the "principal") at 4.5% annual simple interest. Bob pays the lender $200 per month. During the first year of the loan, by how many dollars is the principal of the loan reduced? (NOTE: When a loan is repaid, the borrower first must pay the interest due before any money is applied toward reducing the principal.)
8	Today's date can be written as 12/11/10. This is a set of descending consecutive integers. The next such date will be February 1, 2100 (02/01/00). In how many days from today will it be February 1, 2100? Remember leap years have 366 days, as opposed to the regular 365 days. Leap years occur on years that are multiples of four, except years that are centuries that are not multiples of 400.
9	How many right triangles with integer side lengths and hypotenuse less than 100 units have an even number of sides whose lengths are even numbers?
10	In the equations below, each different letter stands for a different digit, and a given letter always stands for the same digit. What number does *ebc* stand for? $a + b + c = d$ $\quad b + d = e$ $\quad ab\overline{)ebc}^{dd}$

"Math is Cool" Masters – 2010-11

7th Grade – December 11, 2010

Pressure Round Contest

1	The average of 14 different integers is 5. The largest of the 14 integers is 20, and their range is 25. At least n of the 14 integers MUST be negative. What is n?
2	Polygon ABCDE is a regular pentagon. What is the degree measure of angle ACE? 
3	Joel owns a 6-volume set of math contest problems. He has three copies of the first volume, and one copy each of the other five volumes. How many distinguishable ways can Joel arrange these books on a shelf?
4	Using exactly 2010 unit cubes, I build a solid rectangular prism (box-shape) that is at least two units on each edge. How many different prisms could I have built? (To be different, the set of edge lengths must be different. Two congruent prisms that are oriented differently are not different.)
5	If 40% of my number is 12, what is 140% of my number?

"Math is Cool" Masters – 2010-11

7th Grade – December 11, 2010
Mental Math Contest

PERSON 1		
1.1	What is the volume in cubic feet of a cone with a radius of two feet and height of three feet?	4π [ft^3]
1.2	Evaluate: thirteen times twelve.	156
1.3	What is the probability of drawing a red ace from a standard fifty-two card deck?	1/26
1.4	What is the area in square inches of an isosceles right triangle with hypotenuse of length six inches?	18 [in^2]
PERSON 2		
2.1	What is the mean of the following set of numbers: three, three, four, five, five, six, three, six, ten?	5
2.2	What is the least common multiple of 4, 6, and 8?	24
2.3	For what radius will the numerical value of a circle's area and its circumference be equal, disregarding units?	2 [units]
2.4	How many ways can you arrange the letters in the word SEVEN?	60 [ways]
PERSON 3		
3.1	What is the positive difference between three to the third and two to the fifth?	5
3.2	Five friends all shake hands with each other once. How many total handshakes occur?	10 [shakes]
3.3	What is the probability of obtaining a sum of six or seven on a roll of two dice?	11/36
3.4	A wheel of radius seven inches is rolling at twenty revolutions per minute along the ground. How far, in feet, does the wheel travel in half an hour?	700π [ft]
PERSON 4		
4.1	What is the complement of twenty-five degrees?	65 [deg]
4.2	What is eleven to the third power?	1331
4.3	What is the value of x if three x minus eleven equals five?	16/3
4.4	How many squares are in a four by four array of unit squares?	30 [squares]

"Math is Cool" Masters – 1010-11

7th Grade – December 11, 2010

COLLEGE KNOWLEDGE BOWL ROUND #1 - SET 1

#	Problem	Answer
1	What is the least common multiple of ten, eleven, and twelve?	660
2	What is the area in square inches of an equilateral triangle with sides of length five inches?	$\frac{25\sqrt{3}}{4}$ [square inches]
3	What are the odds in favor of obtaining a five in one roll of a fair cubical die? Express your answer as a ratio in the form a to b.	1 to 5
4	If three times my favorite number is equal to seven minus twice my favorite number, then what is my favorite number?	7/5
5	Evaluate: Seven hundred thirty-five times six hundred seventy-five.	496125 [four hundred ninety-six thousand one hundred twenty-five]
6	What is the x-intercept of the equation y equals three x minus six? Express your answer as an ordered pair "x comma y".	(2,0) [two comma zero]
7	What is the volume in cubic meters of a cone with diameter eight meters and height of six meters?	32π [cubic meters]
8	Let y equal seven minus x plus x squared. What is the value of y when x equals eleven?	117
9	What is the probability of obtaining two heads on three flips of a fair coin?	3/8
10	How many positive integers under two hundred have an odd number of positive integer factors?	14 [integers]

"Math is Cool" Masters – 1010-11

7th Grade – December 11, 2010

COLLEGE KNOWLEDGE BOWL ROUND #2 - SET 2

#	Problem	Answer
1	What is the probability of obtaining a sum of eight or nine on a roll of two dice? Express your answer as a fraction.	1/4
2	What is the perimeter in meters of a rhombus with sides of length one-half meter?	2 [meters]
3	What is the y-intercept of y minus four equals seven x plus one? Express your answer as a coordinate pair.	(0,5)
4	Seven is fifty percent of twenty-five percent of one hundred seventy-five percent of what number?	32
5	What is the quotient of the largest factor and the fourth largest factor of seven hundred twenty?	4
6	Convert the following number from base two to base ten: one-zero-one-zero-one.	21 [base 10]
7	What is the area in square centimeters of a trapezoid inscribed in a semicircle of radius two centimeters, if three sides of the trapezoid are congruent to each other and the fourth side is the diameter of the semicircle?	$3\sqrt{3}$ [cm^2]
8	How many positive integers less than one hundred have at least one odd positive integer as one of their factors?	99 [integers]
9	Evaluate: Twenty-six squared.	676
10	A circle of radius 2.75 centimeters is inscribed in a square. What is the probability of selecting a point within the circle that also is within the square? Give your answer as a percentage.	100 [%]

"Math is Cool" Masters – 1010-11

7th Grade – December 11, 2010

COLLEGE KNOWLEDGE BOWL ROUND #3 - SET 3

#	Problem	Answer
1	What is the length in feet of the diagonal of a rectangle with sides of length nine feet and forty feet?	41 [ft]
2	What is the greatest common factor of thirty-six, forty-two, and fifty-four?	6
3	If eight spiders are equivalent to five beetles and fifteen dragonflies are equivalent to two beetles, how many spiders are equivalent to seventy-five dragonflies?	16 [arachnids]
4	What is the probability of obtaining an even number when randomly selecting a positive integer less than one hundred? Express your answer as a fraction.	49/99
5	If f of x is defined as x squared plus x minus two, then what is f of five?	28
6	What is the sum of the first twenty-five positive odd integers?	625
7	What is the positive difference between the product and the sum of eighteen and twenty-four?	390
8	A wheel of diameter sixteen inches rolls at a speed of fourteen revolutions a minute for fifteen minutes. How far in inches does the wheel travel?	3360π [inches]
9	A triangle is defined by the points: two comma two, three comma three, and three comma negative five. What is the area in square units of the triangle?	4 [un^2]
10	As a fraction, what is the greatest area in square feet that can be obtained from a quadrilateral with perimeter of 10 feet?	25/4 [ft^2]

"Math is Cool" Masters – 1010-11

7th Grade – December 11, 2010

COLLEGE KNOWLEDGE BOWL ROUND #4 - SET 4

#	Problem	Answer
1	If x squared plus y squared equals one, then what is the largest possible value of x?	1
2	What is the area in square units of the region defined by the axes and the lines: y equals eight and x equals seven?	56 [un^2]
3	I have a bag of twenty red balls and ten green balls. What is the probability that in two draws without replacement, you get two green balls from this bag? Express your answer as a fraction.	3/29
4	What is the sum of the factors of twenty-eight?	56
5	What is the area in square units of a circle with diameter six y units?	$9y^2\pi$ or $9\pi\ y^2$ [un^2]
6	What is the area in square yards of a semicircle with a diameter of twelve yards?	18π [yd^2]
7	Stacey and Bertha each write down a positive one-digit integer on a piece of paper. If they reveal their numbers and multiply them together, what is the probability that their product is even?	56/81
8	What time is just as long after 5:58 PM as 1:32 PM is after 9:16 AM?	10:14 PM
9	How many distinct prime factors does two hundred four have?	3 [primes]
10	If x plus y equals four and x squared plus y squared equals ten, then what is the value of x times y?	3

"Math is Cool" Masters – 1010-11

7th Grade – December 11, 2010

COLLEGE KNOWLEDGE BOWL ROUND #5 - SET 5

#	Problem	Answer
1	If a bacterium doubles its population every ten minutes, then how many minutes would three bacteria take to reach a population of at least forty-eight bacteria?	40 [min]
2	What is the distance in units from the point three comma seven to the origin?	$\sqrt{58}$ [units]
3	How many factors does one hundred ninety-eight have?	12 [factors]
4	What is the surface area in square decimeters of a cube with edge length of square root three decimeters?	18 [dm^2]
5	If zero and one are the zeroth and first terms, respectively, in the Fibonacci sequence, then what is the sixth number in this sequence?	8
6	What is the probability of drawing an ace from a standard fifty-two card deck?	1/13
7	What is the digit in the hundreds place of the product of the three smallest two digit prime numbers?	4
8	What is the sum of the coefficients of the terms in the expansion of the quantity three x plus one to the third power?	64
9	The area of my special rectangle is one hundred sixty-eight square units. If my rectangle has a diagonal of twenty-five, then what is the perimeter in units of my special rectangle?	62 [un]
10	What is the product of the first ten positive integers?	3628800 [three million six hundred twenty eight thousand eight hundred]

"Math is Cool" Masters – 1010-11

7th Grade – December 11, 2010

COLLEGE KNOWLEDGE BOWL ROUND #6 - SET 6

#	Problem	Answer
1	What is the sum of the first 10 counting numbers?	55
2	What is the sum of the first three digits to the right of the decimal in the decimal expansion of four ninths?	12
3	What is the area in square feet of a right triangle with hypotenuse of thirteen feet and integer side lengths?	30 [ft^2]
4	What is the number of distinct dollar amounts of change I can make with one quarter, two dimes, and three nickels? Include zero cents as one amount.	13 [amounts]
5	If I flip a fair coin and roll a die, what is the probability of obtaining a head on the coin and two on the die?	1/12
6	What is the units digit of seven to the seventy-seventh power?	7
7	If the first three triangular numbers are one, three, and six, then what is the sixth triangular number?	21
8	What is the volume in cubic meters of a cube with a space diagonal of length square root of six meters?	$2\sqrt{2}$ [m^3]
9	What is the positive difference between the mean and median of the following set of numbers: two, seven, two, eleven, nine, fifteen, thirty-one?	2
10	How many integer coordinate pairs represent points in the interior of the region defined by the axes and the line y equal four minus two x?	1 [coordinate pair]

"Math is Cool" Masters – 1010-11

7th Grade – December 11, 2010

COLLEGE KNOWLEDGE BOWL ROUND - EXTRA

#	Problem	Answer
1	Let R be the region bounded by the x-axis, the graph of y equal the absolute value of x, and the two vertical lines x equals negative four and x equals nine. What is the area of R, in square units?	$\frac{97}{2}$ [square units]
2	What is the number of ways can you rearrange the letters in the word MIDDLE, spelled M-I-D-D-L-E?	360 [ways]
3	What is the volume in cubic centimeters of a solid cylinder of radius four centimeters and height of three centimeters, with a cone of the same dimensions cut out of it?	32π [cubic centimeters]

"Math is Cool" Masters – 2010-11

7th Grade – December 11, 2010

KEY

School Name_____Team #_____

Proctor Name_____Room #_____

First Score

(out of 20)

STUDENT NAME_____

INDIVIDUAL MULTIPLE CHOICE - 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. 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	B		
2	C		
3	B		
4	D		
5	B		
6	E		
7	A		
8	D		
9	D		
10	D		

"Math is Cool" Masters – 2010-11

KEY

7th Grade – December 11, 2010

School Name_____Team #_____

Proctor Name_____Room #_____

First Score

(out of 10)

STUDENT NAME_____

Team Contest – Score Sheet

TEAM TEST - 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 **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	$\frac{22}{37}$		
2	$\frac{21}{50}$		
3	1		
4	22 [copies]		
5	$180^{[\circ]}$		
6	2 [cm]		
7	[$] 600		
8	32559 [days]		
9	0 [triangles]		
10	924		

"Math is Cool" Masters – 2010-11

7th Grade – December 11, 2010

KEY

School Name_____Team #_____

Proctor Name_____Room #_____

STUDENT NAME_____

PRESSURE ROUND - 10 minutes – 15% of team score

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	2
2	36 [°]
3	6720 [ways]
4	6 [prisms]
5	42