Sponsored by:
4th Grade - March 23, 2007
Individual Contest

GENERAL INSTRUCTIONS applying to all tests:

- Good sportsmanship is expected throughout the competition by <u>all</u> 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:
 - o For problems dealing with money, a decimal answer should be given.
 - o Express all rational, non-integer answers as reduced common fractions.
- For fifth and sixth grade, all fractions and ratios must be reduced.
- 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
 O.

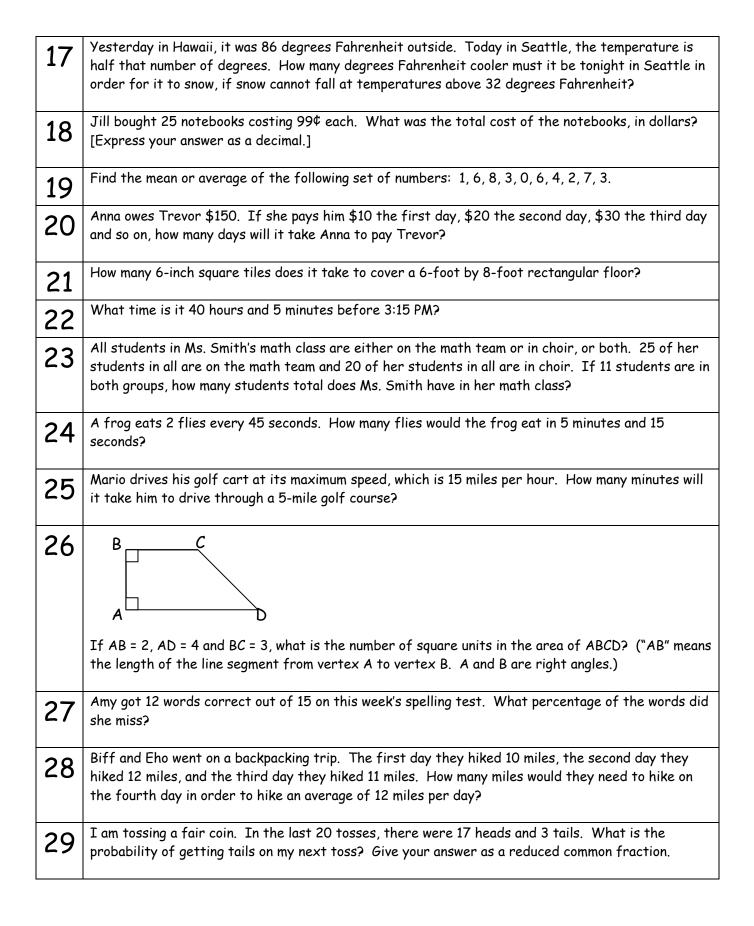
INDIVIDUAL TEST - 35 minutes

When you are prompted to begin, tear off the colored sheet and begin testing. Make sure your name and school are recorded on the answer sheet. Each problem is scored as a 1 or 0. Record your answers on the score sheet. No talking during the test. You will be given a 5 minute warning.

Sponsored by: 4th Grade - March 23, 2007 Individual Contest

Record all answers on the colored cover sheet.

KECUI	d all answers on the colored cover sheet.
1	Subtract 29 from 42.
2	What is the product of 16 and 9?
3	What is 2 + 2 + 2 + 2 + 2 + 2?
4	Find the value of: 8 + 3 - 2 - 5 - 11 + 10
5	Trevor has sand in his shoes. He has 5.5 cubic centimeters of sand in his left shoe and a total of 8.2 cubic centimeters of sand in both shoes. How many cubic centimeters of sand does he have in his right shoe? [Express your answer as a decimal.]
6	Find the sum of 70,000 and 50,000.
7	In square units, what is the area of a square with perimeter 4 units?
8	The 38 students attending Science Camp visit the aquarium. They walk around in pairs to see the exhibits. How many pairs of students are there?
9	Find the next number in the sequence: 57, 53, 49, 45,
10	Annie and Gregg left for North Cascades Base Camp for the yearly math retreat at 9:00 AM and they arrived at 5:00 PM the same day. The trip is 200 miles. What was their average speed in miles per hour?
11	The grocery store sells boxes of one dozen eggs. For Easter, I need 70 eggs. How many boxes of eggs should I buy?
12	Find the sum of $\frac{2}{6} + \frac{3}{6}$. Give your answer as a fraction.
13	The side length of a square is 10 centimeters. A rectangle has the same area as this square. The length of the rectangle is 20 centimeters. What is the width of the rectangle, in centimeters?
14	It takes Tom 7 minutes to drink a glass of lemonade and 30 seconds to eat a licorice stick. How many minutes will it take him to drink 3 glasses of lemonade and eat 6 licorice sticks if he does not eat and drink at the same time and does not pause?
15	How many cups are in two and a half quarts?
16	Two consecutive counting numbers add up to 41. What is four times the larger of these two numbers? ("Consecutive" means in a row, without skipping any, or next to each other, in order.)



	Challenge Questions				
30	What is the sum of the digits of the sum of the digits of the product of 13 and 6?				
31	Cherie and Katie were looking at elephants and ostriches in the Children's Zoo. Cherie saw 12 heads, and Katie saw 30 legs. How many elephants did they see?				
32	Jack Sprat weighs 155 pounds and his wife weighs 213 pounds. If there are 250 grams in half a pound, how many more kilograms does Jack's wife weigh than Jack?				
33	Tom loves pumpkin pie. He ate $\frac{1}{4}$ of a pie for dessert last night and $\frac{1}{3}$ of the pie for				
	breakfast this morning. What fraction of the pie was left?				
34	Cam is building a straight post-and-rail fence for his parents. They need 120 feet of fencing with a post at each end and posts spaced 10 feet apart along the fence. It takes Cam one hour to dig each post-hole and set a post, and 45 minutes to assemble each 10 feet of fencing. How many hours will it take Cam to build the fence?				
35	The hour hand on a clock has moved 75 degrees since I last looked at the clock. How many hours have gone by? Express your answer as a mixed number.				
36	Adding 736 to 1428 gives the same result as subtracting what number from 3000?				
37	When Amy says 1, Bob says 2. When Amy says 3, Bob says 10. When Amy says 5, Bob says 26. When Amy says 9, Bob says 82. Following this pattern, what will Bob say when Amy says 7?				
38	A 1-gallon can of paint costs \$23.75 and covers 250 square feet. How much will it cost (in dollars) to buy enough paint to paint the walls of a room that has four rectangular walls, each 15 feet by 9 feet? Assume that the room has no doors or windows, and that paint is sold only in 1-gallon cans. [Express your answer as a decimal.]				
39	List the following in order of increasing size (smallest first). Your answer should consist of 4 letters in the correct order. A) $\frac{5+3}{10-10} \times 100$				
	B) The number of inches in 10 yards C) The total number of days in 13 consecutive months D) The number of coins in a collection of equal numbers of nickels and quarters worth a total of \$63.90				
40	Nine years ago, Sol was twice as old as Cam. In three years, Cam will be three-fourths of Sol's age. How many years old is Sol right now?				

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4th Grade - March 23, 2007 Team Multiple Choice Contest

Three high schools are going to a track meet. In each event, a first place receives 5 points, a second place receives 3 points, and a third place receives 1 point. The first table gives information about the schools and number of participants, and the second table gives the winners of four races and their schools.

High School	School	Number
name	abbreviation	of athletes
Mt. Rainier	MRHS	51
Highline	HHS	49
Renton	RHS	62

Place	Race 1	Race 2	Race 3	Race 4
1st	R. Runner (MRHS)	B. Bailey (HHS)	R. Runner (MRHS)	Z. Harris (MRHS)
2nd	E. Fudd (HHS)	B. Bunny (MRHS)	D. Mitchell (RHS)	S. Bear (RHS)
3rd	P. Bear (RHS)	G. Field (MRHS)	C. Brown (MRHS)	W. Coyote (HHS)

1	How many more athletes does the Renton team have than the Mt. Rainier team?					
	A) 2	B) 11	C) 12	D) 13	E) Answer not given	
2	How many	athletes are	at the meet	t altogether	?	
	A) 150	B) 162	C) 170	D) 182	E) Answer not given	
3	How many	total points	did Mt. Rain	ier receive	from the first four races?	
	A) 6	B) 11	C) 15	D) 20	E) 36	
4	A van holds meet?	s 14 passeng	ers. How mo	any vans doe	es Highline need to get to the	
	A) 2	B) 3	C) 4	D) 5	E) Answer not given	
5	Josh and Jack are running the 100-meter dash. Josh runs 4 meters per second and Jack runs 5 meters per second. How many seconds after Jack finishes will Josh finish?					
	A) 1	B) 10	<i>C</i>) 20	D) 25	E) Answer not given	

6	1/7 of the Highline team lost their shoes during the meet. How many Highline athletes did not lose their shoes?					
	A) 6	B) 7	C) 14	D) 42	E) 43	
7					ds once with each of the	
	athletes 1	from Mt. Rai	nier. How m	any handsho	akes take place?	
	43.440	D) 04/0	a) 4504	5 \ 20/2	5) (222	
	-	•	·	D) 3062		
8		•			l charges a \$50 printing fee	
	plus \$7 pe	er uniform.	Company B c	charges a \$3	0 printing fee plus \$9 per	
	uniform. uniforms?		lowest amou	unt of money	/Renton can pay for their	
	A) \$407	B) \$434	C) \$484	D) \$588	E) \$634	
9	The Mt. R	Rainier team	has jumpers	s, throwers o	and runners. There are 14	
	jumpers, 9 throwers and 41 runners. Two people throw and jump, nine people					
	run and jump, and three people throw and run. One person does all three.					
	How many	people only	run?			
	A) 30	B) 32	C) 28	D) 41	E) Answer not given	

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4th Grade - March 23, 2007

Team Contest

1	The vertices of a polygon are the points where two sides meet. For example, a square has 4 vertices. How many vertices does the polygon shown at right have?
2	Lucy has three each of all U.S. coins currently in use (penny, nickel, dime, quarter, half-dollar, and dollar). How many cents does she have? Be sure to give your answer in <u>cents</u> , not dollars.
3	Sharon was jogging along a beach. She jogged 135 meters due north, then 380 meters due south, then 210 meters due north. How many meters was she from her starting point?
4	Alex, Billie, and Chris share a plate of 12 cookies. Alex eats more cookies than Billie, and Billie eats more cookies than Chris. If all 12 cookies are eaten, what is the smallest number of cookies Alex could have eaten?
5	David has several cats. Half of them are Manx cats, which have no tail. The other half are ordinary housecats. When he counts all the ears, paws, and tails of all his cats, he finds (correctly) that the total is 39. How many cats does David have?
6	If July 15 was exactly 7 months ago, what month will it be 14 months from today? Give the <u>name</u> of the month, not a number.
7	When Vince, his brother Daren, and their dog Gruff all stood on the scale together, their total weight was 202 pounds. After Gruff ran away and Vince got off the scale to go catch him, the scale with only Daren on it showed 78 pounds. What was the average weight, in pounds, of Vince and Gruff?
8	The minute hand of a broken clock goes twice as fast as it should, while the hour hand goes only half as fast as it should. At noon yesterday, the clock was set correctly. At 6 PM yesterday, what time showed on this broken clock?
9	Sidney was supposed to put a sign reading "FREE COFFEE" on a reader-board at a highway rest stop. However, the letters were slippery and he dropped all 10 of them before he got to the reader-board. Each letter was separate, and he picked them up one by one, at random. What is the probability that the first letter Sidney picked up was just like at least one other letter in the pile? (Give your answer as a fraction.)
10	Figure ABCD is a square, and E, F, G, and H are the midpoints of each side. If side AB = 4 cm, find the shaded area, in square cm.

Sponsored by: 4th Grade - March 23, 2007 Relay Contest

RELAYS - 5 minutes per relay

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!

Practice Relay Answer What is 2 times 6? 12 Person 1 What is the sum of TNYWG and the quotient of 21 divided by 15 Person 2 7? What is the positive difference between the number of spades Person 3 in a deck of cards and TNYWG? Find the product of TNYWG and 30/2. 30 Person 4 Answer Relay #1 What is the area of a rectangle with sides of length 5 and 7? 35 [un²] Person 1 Find the sum of TNYWG and the average of 6 and 10. 43 Person 2 Find the number of minutes between 2:37 pm and 3:23 pm, then 3 Person 3 subtract TNYWG. Find the product of TNYWG and the number of multiples of 3 Person 4 78 between 17 and 94 Relay #2 Answer What is 14 times 6? 84 Person 1 What is the remainder when TNYWG is divided by the number Person 2 of sides on an octagon? Add TNYWG to 3/4 of 12. 13 Person 3 A prime number has only 2 numbers that divide into it with no Person 4 remainder (1 and the prime number itself). How many prime numbers are less than or equal to TNYWG?

Sponsored by:



Final Score:	
KEY	

School Name	Team #	
Proctor Name	 Room #	Division:

Mental Math Contest

MENTAL MATH - 30 seconds per question

When it is time to begin, I 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 from 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 may answer only four questions, and then another member of your team will come up, until each team member has had a turn. If your team has fewer than 4 members, missing team members will receive a zero.

PERSO	ON 1 NAME:	1 or 0
1.1	How many angles does a triangle have?	3 [angles]
1.2	Annie worked for 12 hours a day for 5 days last week. How many hours did Annie work last week?	60 [hrs]
1.3	What is the difference between 67 and 23?	44
1.4	What is 44 divided by 11?	4
PERSO	ON 2 NAME:	- 1
2.1	Find the difference between 19 and 5.	14
2.2	What is 10 minus 4 plus 8 minus 7?	7
2.3	Bill got paid 5 dollars for mowing the lawn. Tim got paid 3 times as much as Bill. How many dollars did Tim get paid?	[\$] 15
2.4	What is 100 percent of 10 percent of 100?	10
PERSO	DN 3 NAME:	•
3.1	Find the diameter of a circle with radius 14.	28 [units]
3.2	What is 48 divided by the number of months in a year?	4
3.3	Find the product of 11 and 5.	55
3.4	What is 36 plus 49?	85
PERSO	DN 4 NAME:	•
4.1	What is the perimeter of a square with side length 25?	100 [units]
4.2	Find the sum of 15 and 13.	28
4.3	If 4 people can sit on each camel, how many people can sit on 6 camels?	24 [people]
4.4	What is 30 times 20?	600

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4th Grade - March 23, 2007

Division 1

#	Problem	Answer
1	What is the tens digit of the product of three and seven?	2
2	I have a rope ten feet long. Which shape should I make with my rope in order to surround the greatest area a square, a triangle, or a circle?	circle
3	The first four terms of a certain sequence are 1, 3, 5, and 7. Find the ninth term of this sequence.	17
4	My calculator automatically adds ten to every number I enter. I entered two plus thirteen. What number did my calculator show as the answer?	35
5	What is the smallest whole number bigger than the sum of two-thirds and two-thirds?	2
6	It snowed steadily all day yesterday at the rate of one inch per hour. How many inches did it snow between seven AM and one-fifteen PM? Give your answer as a mixed number.	$6\frac{1}{4}$ [inches]
7	Find the remainder when 153 is divided by 7.	6
	Extra Problem - Only if Needed	
8	How many ways can you arrange the letters in the word TACO, spelled T-A-C-O?	24 [ways]

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4th Grade - March 23, 2007

Division 1

#	Problem	Answer
1	Rachel is taller than Val, who is shorter than Patty. Patty is shorter than Kerri and Rachel. Kerri is best friends with the shortest of the group. Who is Kerri's best friend?	Val
2	A rose has 30 petals and a daisy has 21 petals. How many petals are there in a bouquet of two roses and three daisies?	123 [petals]
3	Eric is riding his bike at a speed of 30 miles per hour. At this speed, how many miles will he travel in 4 hours?	120 [miles]
4	An equilateral triangle has equal sides. Find the number of inches in the perimeter of an equilateral triangle with side length one foot.	36 [inches]
5	Find one more than the product of two times nine and add it to one less than the product of three times seven.	39
6	Jamie is 16 years old and Jessica is 12 years old. In years, what will the sum of their ages be 3 years from now?	34 [years]
7	I am counting backwards by fives. The first number I say is 72. What is the fourth number I say?	57
	Extra Problem - Only if Needed	
8	How many degrees are in the largest angle of a right triangle?	90 [degrees]

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Division 1

#	Problem	Answer
1	How many circles of radius two inches will fit inside a circle of diameter five inches?	1 [circle]
2	When 4 copies of the number 10 are multiplied together, how many digits will the product have?	5 [digits]
3	Find the average or arithmetic mean of the following set of numbers: 9, 1, 7, 5, 5, 3	5
4	A pet shop sells cats, dogs and parrots. If there are 3 cats, 4 dogs, 2 parrots and 2 employees, how many legs are there in the pet shop?	36 [legs]
5	What is the probability of rolling a number less than 3 when rolling a standard number cube or die? Give your answer as a fraction.	2/6 [or 1/3]
6	Sam can throw a Frisbee 25 feet and Michael can throw a Frisbee 37 feet. How many feet farther can Michael throw the Frisbee than Sam?	12 [feet]
7	For a spelling quiz, Helen numbered the lines of her paper from 1 through 20. How many digits did Helen write?	31 [digits]
	Extra Problem - Only if Needed	
8	Find the number of apples Jackie can pick in 45 minutes if she can pick 104 apples in one hour.	78 [apples]

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4th Grade - March 23, 2007

Division 2

#	Problem	Answer
1	Subtract two from the product of two times two times two.	6
2	Joel fed the family dog Slowpoke every day in December and January, and his brother Cam fed Slowpoke every day in February and March. If it is not a Leap Year, how many days more did Joel work than Cam?	3 [days]
3	Fill in the blank: Every rectangle has at least lines of symmetry.	2 [lines of symmetry]
4	Erin counts by twos starting with 1, 3, 5, and so on. How many numbers has she said after she says her first 3-digit number?	51 [numbers]
5	What is the largest possible sum when three standard dice or number cubes are rolled?	18
6	When forty-five thousand eight hundred seventy-seven is rounded to the nearest thousand, what is the last digit of this rounded number that is not zero?	6
7	A cafeteria serves 2 types of lettuce and 5 types of salad dressing. How many possible salads can be served if a salad consists of one type of lettuce and one type of dressing?	10 [salads]
	Extra Problem - Only if Needed	
8	It is 11:17 AM. What time will it be in 48 minutes?	12:05 PM

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4th Grade - March 23, 2007

Division 2

#	Problem	Answer
1	Halogen light bulbs last 450 hours. How many hours will a pack of three halogen bulbs last if they are used in one socket immediately following one another?	1350 [hours]
2	Sally cuts a piece of string into ten pieces. If she doesn't cut through more than one string with each cut, how many cuts did it take?	9 [cuts]
3	I am thinking of a counting number. When I divide it by three, I get a remainder of one. Is my number even, odd, or you can't tell?	can't tell
4	Maximus is taller and stronger than Marcus, who is shorter than Quintus. If Cicero is shorter than Marcus, who is the second shortest person in this group?	Marcus
5	Fill in the blank in this sequence: 7, 14, 21,	28
6	Find the number of inches in the perimeter of a triangle with sides of length 21, 17 and 5 inches.	43 [inches]
7	A firefighter is on the fifth floor of a building. She runs up 7 floors and rescues a kitten. She then goes down 9 floors and drops the kitten off. Next she climbs 12 floors up from this spot to put out the fire. On what floor was the fire?	15 [or 15th]
	Extra Problem - Only if Needed	
8	Multiply the product of 3 and 4 times the sum of 3 and 4.	84

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Division 2

#	Problem	Answer
1	Danny has a penny, a nickel, a dime, and a quarter in his pocket. How many coins would he have to take out to be sure of getting at least five cents?	2 [coins]
2	What is the remainder when 15 is divided by 16?	15
3	Katie left her bookmark between two pages whose numbers had a sum of 49. What is the number of the larger of these two pages?	[page] 25
4	How many digits are in the number one hundred fifty thousand?	6 [digits]
5	What number would you have to add to the product of zero and seven to get a sum of twelve?	12
6	If today is Wednesday, what day of the week will it be 22 days from today?	Thursday
7	It takes 5 minutes for a horse to chew a carrot. How many carrots can the horse chew in three-quarters of an hour?	9 [carrots]
	Extra Problem - Only if Needed	
8	What is the value of 10 minus 1 plus 9 minus 2 plus 8 minus 3?	21

4th Grade - March 23, 2007

Final Score:
KEY

School Name_	Team #	
School Name		First Score
Proctor Name_	Room #	

STUDENT NAME_____Division: _____

Individual Contest - Score Sheet DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1	13		
2	144		
3	12		
4	3		
5	2.7 [cm ³]		
6	120,000		
7	1 [un ²]		
8	19 [pairs]		
9	41		
10	25 [mph]		
11	6 [boxes]		
12	5/6		
13	5 [cm]		
14	24 [min]		
15	10 [cups]		
16	84		
17	11 [degrees]		
18	[\$] 24.75		
19	4		
20	5 [days]		
	ı		

	Answer	1 or 0	1 or 0
21	192 [tiles]		
22	11:10 PM		
23	34 [students]		
24	14 [flies]		
25	20 [min]		
26	7 [un ²]		
27	20 [%]		
28	15 [miles]		
29	1/2		
30	6		
31	3 [elephants]		
32	29 [kg]		
33	5/12 [or equiv. unreduced fraction]		
34	22 [hours]		
35	$2\frac{1}{2}$ [hrs] [or equiv. mix number]		
36	836		
37	50		
38	[\$] 71.25		
39	BCAD		
40	21 [years]		

4th Grade - March 23, 2007

	KEY
_	First Score

Final Score:

School Name	·	_Team #	First Score
Proctor Name	_Room #	_Division:	(out of 18)

Team Multiple Choice Contest - Score Sheet

TEAM MULTIPLE CHOICE - 15 minutes

This test is the only test where you will be penalized for incorrect responses. You will receive 2 points for a correct letter response, 0 points for leaving it blank and -1 point for an incorrect response. When you are prompted to begin, tear off the colored sheet, pass out a copy of the test to each team member, and begin testing. Since this is a multiple choice test, ONLY a letter response should be listed as an answer on the answer sheet.

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

DO NOT WRITE IN SHADED REGIONS

	Answer	-1, 0 or 2	-1, 0 or 2
1	В		
2	В		
3	D		
4	С		
5	E [5]		
6	D		
7	В		
8	С		
9	Α		

4th Grade - March 23, 2007

KEY
 First Score

Final Score:

School Name	10	eam #	First Scor
Proctor Name	Room #	Div:	(out of 20

Team Contest - Score Sheet

TEAM TEST - 15 minutes

When you are prompted to begin, tear off the colored sheet and give a copy of the test to each of your team members and begin testing. Each problem is scored as a 2 or 0.

DO NOT WRITE IN SHADED REGIONS

	Answer	2 or 0	2 or 0
1	7 [vertices]		
2	573 [cents or ¢]		
3	35 [meters]		
4	5 [cookies]		
5	6 [cats]		
6	April		
7	62 [pounds]		
8	3:00 [PM]		
9	7/10		
10	10 [square cm or cm ²]		

KEY

4th Grade - March 23, 2007

School:	Team #	
Proctor:	Room #Div _	

PRACTICE RELAY

Answer for person	Answer for person	Answer for person	Answer for person
# 1	# 2	# 3	# 4
12	15	2	30
1 or 0	1 or 0	1 or 0	2 or 0

RELAY # 1

Answer for person	Answer for person	Answer for person	Answer for person
# 1	# 2	# 3	# 4
35 [un ²]	43	3	78
1 or 0	1 or 0	1 or 0	2 or 0

RELAY # 2

Answer for person	Answer for person	Answer for person	Answer for person
# 1	# 2	# 3	# 4
84	4	13	6
1 or 0	1 or 0	1 or 0	2 or 0