"Math is Cool" Championships-1999-00
Sponsored by: D. Stoffel, F. Goldstein and S. Pachernegg
4th Grade - April 14, 2000
Individual Contest

Express all answers as reduced fractions unless stated otherwise.
Leave answers in terms of π where applicable.
Do not round any answers unless stated otherwise.
Record all answers on the green cover sheet.

1. I am going to "Math is Cool" University when I am 17 years old. How old am I now if I am going to "Math is Cool" University in 8 years?

2. Evaluate: 43,100 - 12,009

3. Evaluate: 18 + 32 - 16

4. Ellie has 57 stuffed animals. She gave 5 stuffed animals to each of her three friends. How many stuffed animals does she have left?

5. Amanda has 3 books. The first book has 250 pages, the second has 100 pages. The total of all the pages is 400. How many pages does the third book have?

6. There are 50 children in a school. How many desks does the school need if each desk seats two children?

7. If you use 5 gallons of hot water to take a bath, how many pints of hot water would you use?

8. Julie watched 4 hours of television. How many minutes of television did she watch?

9. Serenity has 70 pairs of clean pants. Every time she wears a pair of pants she uses two socks. She wears a different pair of pants each day. How many weeks will it be before she needs to wash her pants if she waits until all her pants are dirty?

10. Shane earns three dollars a week. How many weeks will it take to earn enough money for him to buy a $21 soccer ball?

11. Krista can fold 7 towels a minute. How many towels can she fold in one hour?

12.   What is the sum of all the even numbers between 7 and 13?

13.   Write the number four million, five hundred and twenty-two.

14.   If Dillon and Dylan went hiking in Nepal for 4 and one-half years, how many months would they hike in Nepal?

15.   Mackenzie earns $0.25 an hour for singing. Mackenzie has earned $22.75 for singing. How many hours has she sung?

16.   If Dustin is twice as old as Amy, and Amy is 5, how old will Dustin be in 7 years?

17.   How many odd numbers are there between 20 and 30?

18.   A jar contains 67,893 jelly beans. The jelly beans are purple, yellow, and green. Krista ate all 4,976 of the purple jelly beans.   How many jelly beans are left?

19.   How many sides does a decagon have?

20.   Evaluate: 25 x 17

21.   Evaluate: (10 ÷ 2) x (20 - 4) - (3 x 10) + (8 - 4)

22.   Joel is 5 foot 10 inches. His little brother, Carl, is 4 foot 11 inches. How many inches taller is Joel than Carl?

23.   If the wool from 1 sheep can make 4 sweaters, how many sheep are needed to make 100 sweaters?

24.   Stephen went skydiving. He stayed in the air for 2 hours, 35 minutes, and 9 seconds. How many seconds did he stay in the air?

25.   Sarah bought five apples for $0.27 each and seven papayas for $0.99 each. How much money, in dollars, did Sarah spend?

26.   The sum of 7 numbers is 98. What is their average?

27.   Each widget costs $2.32 to sew and is sold for $4.99. If 87 of them are sold, how much money is made?

28.   What is the square root of 49?

29.   What is the area of a circle with diameter 18?

Challenge Questions

30. Find the next number in the sequence: 1, 1, 2, 3, 5, 8, 13, 21, __

31. The Omniscient Tealah has a magic trick. First, pick a number between 1 and 10. Multiply the number by two, add 6, then divide it by 2. Finally, subtract your original number. Tealah knows what your final number is. What is it?

32. If two dice are rolled, what is the probability of rolling a sum between 2 and 12?

33. 8 pencils can be carved from a pound of wood. 16 trees are chopped down, each weighing 1 ton. How many pencils can be carved from these trees?

34. Evaluate: 6/7 + 3/7 - 1

35. A quadrilateral has an area of 36 square inches. What is its smallest possible perimeter?

36. A square is drawn inside another square by connecting the midpoints of the sides of the first square. If the area of the first square is 30 square inches, what is the area of the second square?

37. The average number of spots in a group of 542 ladybugs is 6. How many total spots do all the ladybugs have?

38. The Committee of Inept Engineers is building an underwater bridge to span Lake Frostbite. They can build sections that are 300 feet long or 500 feet long. If the lake is 4600 feet across, what is the least number of sections needed to build the bridge?

39. The sum of 17 consecutive numbers is 0. What is the largest number?

40. An equilateral triangle and a square both have integer lengths for the sides, and their perimeters are equal. What is the least possible perimeter of the square?

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Team Multiple Choice Contest

Drew, Silas, Joel, Krista and Ryan work at the Random Number Factory. Each operate one machine which performs a specific numerical function. Below is a list of each machine and the cost for each operation:

Operator	Machine Function	Cost for Each Operation
Drew	squares the number	$12.00
Silas	subtracts 10	$5.00
Joel	multiplies by 3	$7.00
Krista	subtracts 3	$9.00
Ryan	adds 2	$2.00

When a customer comes to the factory with a number and they need it converted to a different number, the customer chooses the machine or machines that will result in the desired number and then the customer is charged the appropriate amount.

Use the table above to answer the following questions:

1. What is the least amount of money charged to convert a 5 into a 7?
   A) $1.00   B) $2.00   C)$3.00   D)$4.00   E)$5.00
2. What is the least number of steps to convert a 11 into a 5?
   A)1   B)2   C)3   D)4   E)5
3. What is the least number of steps to convert a 80 into a 12?
   A)6   B)7   C)8   D)9   E)10
4. What is the least number of steps to convert three 4's into three 1's?
   A)1   B)2   C)3   D)4   E)5
5. What is the least amount of money charged to convert a 75 into a 64?
   A) $12.00   B) $13.00   C)$14.00   D)$15.00   E)$16.00
6. What is the least number of steps to convert a 12 into a 17?
   A)3   B)4   C)5   D)6   E)7
7. What is the least amount of money charged to convert an 8 into a 25?
   A) $5.00   B) $10.00   C)$15.00   D)$20.00   E)$25.00
8. What is the least number of steps to convert an 11 into a 100?
   A)3   B)4   C)5   D)6   E)7
9. What is the least amount of money charged to convert a 75 into a 49?
   A) $15.00   B) $16.00   C)$17.00   D)$18.00   E)$19.00

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Team Contest

Record answers on score sheet.

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1. What is the mean of the following set of data? 1, 1, 1, 9

2. 180 fish swim by a fish counter every three hours. How many fish swim by the fish counter in 10 minutes?

3. If 80 teams of 4 compete at a "Math is Cool" Championships, how many competitors are present?

4. A club properly named "Almost Committed" meets once every 6 times they say they will meet. If the club has met 5 times, how many times have they said they would meet?

5. Evaluate: 1 + 2 + 3 + 4 + … + 24 + 25

6. Katherine planned to use her $100 savings to buy a game for $59. She wanted to use the money that was left over to buy another game for $45. How much more money will she need?

7. A covered wagon could travel about 2 miles per hour. How many miles could a covered wagon travel in 3 days if it traveled 8 hours a day?

8. Evaluate: 500 + 400 + 300 - 499 - 399 - 299

9. Orville and Wilbur Wright's first flight on December 17, 1903 went 120 feet in 12 seconds. How many feet per second was the plane traveling?

10. Silas used 2.5 gallons of paint to repaint a kitchen in an apartment complex where all the kitchens are all exactly alike. The apartment building has 9 floors each with 6 apartments. How many gallons of paint will he use if he repaints all the kitchens?

Practice relay
Person#1
8 + 27

Practice relay
Person#2
TNYWG ÷ 7

Practice relay
Person#3
TNYWG times 8

Practice relay
Person#4
TNYWG ÷ 5

Relay #1
Person#1
12 + 75

Relay#1
Person#2
TNYWG - 17

Relay#1
Person#3
TNYWG ÷ 10

Relay#1
Person#4
TNYWG times 9

Relay#2
Person#1
If a clown can hold 5 balloons, how many balloons can 3 clowns hold?

Relay#2
Person#2
If one pumpkin weighs 10 pounds and the other pumpkin weighs TNYWG pounds, how much do they weigh together?

Relay#2
Person#3
If one dog eats 5 pounds of dog food, how many dogs can you feed with TNYWG pounds of dog food?

Relay#2
Person#4
If Dillon walks 2 miles a day, how many miles will he walk in TNYWG days?

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Mental Math

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Person #1

1.   What is the product of 4 and 7?

2.   What is the sum of 15 and 18?

3.   What is 26 divided by 2?

4.   What is the perimeter of a square with side length 4?

Person #2

1.   What is the product of 3 and 5 ?

2.   What is the difference between 62 and 17?

3.   What is 42 divided by 6?

4.   How many quarts are in gallon?

Person#3

1.   What is the product of 11 and 3?

2.   What is the difference between 78 and 29?

3.   What is 140 divided by 2?

4.   How many inches are in 2 feet?

Person#4

1.   What is the product of 9 and 8?

2.   What is the sum of 55 and 87?

3.   What is the difference between 101 and 32?

4.   How many nickels are in 2 dollars?

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	College Knowledge Bowl Questions #1	
1	What is the probability of drawing an ace or a red 4 in one draw from a standard deck of 52 cards?	6/52 or 3/26
2	One sheep make 8 coats. How many coats can 7 sheep make?	56
3	What is the remainder when 22 is divided by 7?	1
4	In my drawer I have red, green, blue, orange and yellow socks. How many socks must I remove to insure that I have at least two of the same color?	6
5	How many total letters are in the phrase "Math is Cool"?	10
6	What is the perimeter of a triangle with sides length 18, 22 and 22?	62
7	If four people all shake hands with each other once, how many handshakes occur?	6
	Number **8** is an extra question. Only use it if needed.	
8	What comes next in the sequence? 2, 6, 10, 14, _____	18

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	College Knowledge Bowl Questions #2	
1	The sum of two consecutive odd numbers is 8. What is the smallest number?	3
2	How many sides does a hexagon have?	6
3	There are chickens and cows in a field, there is a total of 5 heads and 16 feet. How many cows are in the field?	3
4	What is the sum of the first five prime numbers?	28
5	What is the perimeter of a square with sides of length 5?	20
6	What is the value, in dollars, of 3 quarters, 2 dimes, and 5 pennies.	$1.00
7	What is 7 squared?	49
	Number _8_ is an extra question. Only use it if needed.	
8	What do I get if I multiply 25 by 25 and then divide the result by 25?	25

	College Knowledge Bowl Questions #3	
1	What is the sum of 6 fives?	30
2	What time is it 75 minutes before 5:55 p.m.?	4:40 p.m.
3	75 is 23 more than what number?	52
4	While signing a book, Morten used all the letters in the alphabet that came after c but before w. How many letters did he use?	19
5	What is 78 + 79 + 80 + 22 + 21 + 20?	300
6	What is the perimeter of a rhombus of side length 8?	32
7	What do I get if divide 15 by 3 and then multiply by 20?	100
	Number _8_ is an extra question. Only use it if needed.	
8	Mr. Shoemaker gets a weekly allowance of 5 quarter, 2 dimes, 5 nickels and 5 pennies. If he spends 33 cents each week, how much money, in dollars, does he save each week?	$1.42

"Math is Cool" Championships -- 1999-00

4th grade - April 14, 2000

School Name_____ Team #_____

Proctor Name_____ Room #_____

Key

Full Name:_____

Individual Contest - Score Sheet
DO NOT WRITE IN SHADED REGIONS

1st Score

Out of 40

	Answer	1 or 0	1 or 0			Answer	1 or 0	1 or 0
1	9(years)				21	54		
2	31,091				22	11(inches)		
3	34				23	25(sheep)		
4	42(animals)				24	9,309(seconds)		
5	50(pages)				25	($)8.28		
6	25(desks)				26	14		
7	40(pints)				27	($)232.29		
8	240(minutes)				28	7		
9	10(weeks)				29	81π		
10	7(weeks)				30	34		
11	420(towels)				31	3		
12	30				32	34/36 or 17/18		
13	4,000,522				33	256,000(pencils)		
14	54(months)				34	2/7		
15	91(hours)				35	24(in)		
16	17(years old)				36	15(in^2)		
17	5				37	3252(spots)		
18	62,917(jelly beans)				38	10		
19	10(sides)				39	8		
20	425				40	12		

School Name_____ Team #_____

Proctor Name_____ Room #_____

Team Multiple Choice Contest-Score Sheet

1st Score

Correct responses are worth 2 points, incorrect responses are worth -1 point and no response is 0 points. Answers need to be recorded letters.

Out of 18

DO NOT WRITE IN SHADED REGIONS

	Answer	-1, 0 or 2	-1, 0 or 2
1	B		
2	B		
3	C		
4	C		
5	E		
6	A		
7	D		
8	C		
9	E		

School Name_____ Team #_____
Proctor Name_____ Room #_____

Key

1st Score

Out of 10

Team Contest-Score Sheet

DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1	3		
2	10(fish)		
3	320 (competitors)		
4	30(times)		
5	325		
6	($)4.00		
7	48(miles)		
8	3		
9	10(feet/sec)		
10	135(gallons)		

School Name_____Team #_____

Proctor Name_____Room #_____

Relay Contest - Score Sheet

Practice relay

8

Answer for relay #1

63

Answer for relay #2

10
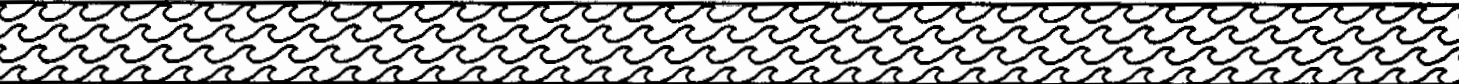
Mental Math - Score Sheet

1	28
2	33
3	13
4	16

1	15
2	45
3	7
4	4

1	33
2	49
3	70
4	24

1	72
2	142
3	69
4	40