

"Math is Cool" Championships-1999-00

Sponsored by: Basic American Foods

5th Grade - March 24, 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 colored cover sheet.

1. Evaluate: $2000-324$
2. What is the probability of rolling a 6 on a six-sided die?
3. What is the quotient of 345 and 5?
4. True or False: $2+3+4+5+6=22$
5. Find the product of 99 and 12.
6. If the Dallas Cowboys destroy the Vikings with a score of 49 to 7, what is the sum of their scores?
7. For every A that Sara gets, her parents give her \$35. If she gets 13 A's this year, how much money will she get?
8. Evaluate: $20001-1999$
9. Evaluate: $444 \div 2$
10. What is the remainder when 3 is divided into 51?
11. Find the sum of the first 3 prime numbers.
12. If one decade is 10 years, then how many years are in 70 decades?
13. Molly has \$90.00 to spend shopping. CD's are \$15.00 each, or two for \$25.00. What is the maximum number of CD's Molly can buy?
14. How many diagonal lines can be drawn in a convex octagon?

15. She-Ra and her winged horse, Nitro, fly towards the mountain which is 94 miles away. She flies 50 miles when she hears someone calling for help. She backtracks 20 miles and then flies to the mountain. How many total miles did she fly?
16. School starts at 7:45 pm. It takes Brad 15 minutes to get to school. If he wants to be at school 10 minutes early, what time should he leave home?
17. What is the sum of the factors of 6?
18. Beth bought 27 candy bars. If she gave 3 to each of her friends, and kept 3 for herself, how many friends does she have?
19. Including 14 and 73, how many counting numbers are there from 14 to 73?
20. What is the sum of the next two numbers in the sequence 2, 4, 8, 16, __, __?
21. What is the mean of the following data set? { 1,3,7,9,15,18,24 }
22. Is $4.37 - 1.93 >$, $<$ or $=$ to $9.84 - 8.2$?
23. Amanda, Beth, Anna, Sheena, and Georgia are shopping. Anna and Sheena each spent \$30.00 at Hot Topic. Beth and Georgia each spent \$40.00 on CD's at Sam Goody. Amanda, Anna, and Beth each spent \$15.00 at Spencer's. Who spent the most money?
24. Henry said he found a silver nugget that weighed 720 ounces. If silver is worth \$300.00 a pound, how much is his very large nugget worth?
25. What is $5/6 - 3/4$?
26. Pistol the scurvy Pirate only knows four letters! A, R, G, and H. How many ways can the letters be arranged if the "H" has to be last? (Letters cannot be repeated).
27. Four triangles are placed on the side of a square so that one side of each triangle completely covers one side of the square. What is the most possible number of sides of the new figure?
28. If the eight girls from the Moses Lake High School Math Team and the twelve girls from the Ephrata Math Team each shake hands with each member of the other team exactly once, how many handshakes occur?
29. The average of the shoe sizes in Jacob's closet is $8 \frac{1}{2}$. If the sum of the shoe sizes is 153, how many shoes does Jacob have?

Challenge Questions

30. What is the sum, in degrees, of the interior angles of a triangle?
31. Sheena drives her car at 70 miles per hour, and she travels 105 miles to Spokane. How many minutes does it take her to reach Spokane?
32. Anna, Sheena, Lisa, and Rachel go to Subway for sandwiches. They can have their sandwiches on either wheat or white bread and they can choose from among 7 different meats, 5 different cheeses, 3 different potato chips, and 4 different beverages. How many meal combinations are possible for one person?
33. How many ways can you arrange 4 books on a shelf?
34. Anna has 4 more dollars than Lance. Lance has 6 more dollars than Danny. Danny has twice as much as Kevin. If Kevin has 5 dollars, how many dollars does Anna have?
35. On planet Syzygy, Stickboy weighs 30 pounds. On earth, Fat Albert weighs 360 pounds, and weighs 90 pounds on Syzygy. How much does Stickboy weigh on Earth?
36. When Drew divides his favorite number by 3, the remainder is 2. When he divides it by 2, the remainder is 1, and when he divides it by 4, the remainder is 3. His number is between 30 and 40. What is Drew's favorite number?
37. The ratio of boys to girls at a soccer game is 3 to 5. If there is a total of 80 boys and girls present, how many girls are there?
38. Drew, the Bold Boldly, ate $\frac{3}{8}$ of a humongous pizza. Brian the Wee ate $\frac{1}{4}$ of the pizza, and Pat, the Funny-Looking, ate $\frac{1}{3}$ of the pizza. There were 48 slices in the pizza. How many slices are left for Sir Silas the Voracious?
39. What is the sum of all the perfect squares between 10 and 70?
40. What is the reciprocal of the sum of the reciprocals of 2 and 3?

"Math is Cool" Championships-1999-00

Sponsored by: Basic American Foods

5th Grade - March 24, 2000

Team Multiple Choice Contest

When the Smith's went on vacation, this is the note they left for their neighbor so he would know how to take care of the Smith's animals.

Dear Sean:

Thank you for agreeing to feed our animals while we are on vacation. We will be gone from July 11, 2000 to August 24, 2000. We will take care of the animals before we leave on July 11th. We will be returning late in the evening on August 24th, so please take care of the animals that day for us.

Every day, feed and water the following animals the specified amounts:

Dog: feed him a pint of dog food, one gallon of water and walk him 1200 feet a day.

14 Chickens: feed the chickens 3 gallons of water, 6 quarts of grain and 4 ounces of oyster shell.

Horse: feed the horse 8 gallons of water and 20 pounds of hay.

4 cats: feed them each 6 cups of cat food and 6 cups of water.

3 llamas: feed each llama 1 gallon of water, a cup of grain, and 5 pounds of hay.

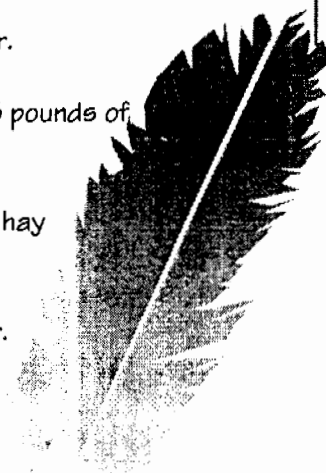
Goat: feed the goat the newspaper, 2 cups of grain, 1 pound of hay and 1 gallon of water.

20 Rabbits: feed each rabbit 1 cup of grain and 2 cups of water.

4 cows: feed each cow 3 gallons of water, 60 pounds of hay and 1 quart of grain.

Thank you again for your help. We will be calling every few days.

The Smiths.



1. How many days did they ask Sean to feed the animals?
A) 43 B) 45 C) 44 D) 22 E) Answer not given

2. How many total animals do the Smith's have?
A) 48 B) 47 C) 33 D) 52 E) Answer not given

3. How many gallons of dog food will the dog eat while the Smith's are away?
A) 6 B) $6\frac{1}{2}$ C) 5 D) $5\frac{1}{2}$ E) Answer not given

4. How many miles will the dog be walked while the Smith's are away?
A) 5 B) 10 C) 2 D) 8 E) Answer not given

5. How many gallons of water will be fed each day.
A) 22 B) 26 C) 32 D) 44 E) Answer not given

6. What is the total number of quarts of grain the llamas will eat while the Smith's are away?
A) 11 B) 12 C) 13 D) 33 E) Answer not given

7. How many pounds of hay will be fed each day?
A) 85 B) 276 C) 215 D) 86 E) Answer not given

8. How many pounds of oyster shell will be fed to the chickens while the Smith's are away?
A) 11 B) 4 C) 16 D) 20 E) Answer not given

9. How many quarts of water will be fed while the Smith's are away?
A) 100 B) 88 C) 1000 D) 5632 E) Answer not given

"Math is Cool" Championships-1999-00

Sponsored by: Basic American Foods

5th Grade - March 24, 2000

Team Contest

Express all answers as reduced fractions or in terms of radicals.

1. How many different sums can you have when you roll 3 six-sided dice?
2. What is the probability that when two dice are rolled, both dice show a six?
3. In a certain class, Silas has received scores of 92 and 85 on his tests so far. If there is one test left, what must he receive on it to receive a 90 average?
4. Solve for x : $5x-2=13$
5. I have one gallon of water. If I remove one quart and one pint from the gallon of water, how many cups of water are left?
6. Biff is five years older than Eho. Two years ago, Biff was twice as old as Eho. How old is Biff now?
7. Evaluate: $5A + 2B$ when $A=3$ and $B=5$.
8. Drew is pushing a boulder up a 30 foot hill. Each day, he is able to push it five feet up, but each night, it slides back four feet. How many days will it take him to reach the top of the hill?
9. On Parzival's cattle ranch there are both people and cattle. If you can see 6 heads and 20 feet, how many cattle are there?
10. Three consecutive numbers have a sum of 12. What is the smallest of these numbers?

"Math Is Cool" Championships-1999-00

Sponsored by: Basic American Foods

5th Grade - March 24, 2000

Mental Math Contest

Express all answers as reduced fractions or in terms of radicals and π , where applicable, unless otherwise instructed.

Person #1

1. What is the sum of 101 and 53?
2. What is the perimeter of a square with a side of length 6?
3. How many sides does a pentagon have?
4. How many ounces are in a pound?

Person #2

1. What is the quotient of 81 and 3?
2. David is 2 yards tall. How tall is he in inches?
3. How many pints are in 3 gallons?
4. You have 36 cookies. You give half of them to your grandmother and half of the remainder to the neighbor across the street, how many cookies do you have left?

Person#3

1. What is the product of 110 and 20?
2. Math Team practice starts at 3:25 p.m. You were 11 minutes early. What time did you arrive?
3. What is one-seventh of 35?
4. The sum of Grace and Amanda's ages is 15 years. What will the sum of their ages be in 4 years?

Person#4

1. What is the difference between 123 and 75?
2. How many feet are in a half mile?
3. What is the area of a rectangle with sides of length 5 and 7?
4. What is the smallest two digit prime number?

Practice relay

Person#1

What is the product of 8 and 11?

Practice relay

Person#2

What is the quotient of TNYWG and 4?

Practice relay

Person#3

What is the sum of TNYWG and 15?

Practice relay

Person#4

What is the product of TNYWG and 10?

Relay #1

Person#1

What is the remainder of the quotient of 822 and 5?

Relay#1

Person#2

What is the product of TNYWG and the amount of eggs in 3 dozen?

Relay#1

Person#3

Divide the TNYWG by $16 - 8 + 1 - 4 + 3$.

Relay#1

Person#4

It takes 4 blocks of firewood to burn in a wood stove a day to heat a house. How many blocks of firewood will it take to heat a house for TNYWG weeks?

Relay#2

Person#1

What is the sum of the millions digit and the tens digit of 5,638,215?

Relay#2

Person#2

Find the product of TNYWG and the number of feet in four yards.

Relay#2

Person#3

Find the quotient of TNYWG and the number of ways you can arrange the letters in "CAT"?

Relay#2

Person#4

Tealah gets 9 eggs a day from her chickens. She uses 3 eggs a week for her own use. If she sells the excess eggs for a dollar a dozen, how much will she earn in TNYWG weeks?

"Math is Cool" Championships -- 1999-00

5th grade - March 24, 2000

School Name _____ Team # _____

Proctor Name _____ Room # _____

Key

Full Name: _____

1st Score

Individual Contest - Score Sheet

DO NOT WRITE IN SHADED REGIONS

Out of 40

	Answer	1 or 0	1 or 0
1	1676		
2	1/6		
3	69		
4	False or F		
5	1188		
6	56(points)		
7	(\$) ⁴ 55		
8	18002		
9	222		
10	0		
11	10		
12	700(years)		
13	7(CD's)		
14	20(diagonals)		
15	134(miles)		
16	7:20 p.m.		
17	12		
18	8(friends)		
19	60		
20	96		

	Answer	1 or 0	1 or 0
21	11		
22	>		
23	Beth		
24	(\$) ¹³ ,500		
25	1/12		
26	6		
27	8(sides)		
28	96(handshakes)		
29	18(shoes)		
30	180(°)		
31	90(minutes)		
32	840(meals)		
33	24		
34	(\$) ²⁰		
35	120 (lbs)		
36	35		
37	50(girls)		
38	2(slices)		
39	190		
40	6/5		

"Math is Cool" Championships -- 1999-00

5th grade - March 24, 2000

School Name _____ Team # _____

Proctor Name _____ Room # _____



Team Multiple Choice Contest-Score Sheet

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

1 st Score

Out of 18

DO NOT WRITE IN SHADED REGIONS

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

"Math is Cool" Championships -- 1999-00

5th grade - March 24, 2000

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	16		
2	1/36		
3	93		
4	3		
5	10		
6	12		
7	25		
8	26		
9	4		
10	3		

"Math is Cool" Championships -- 1999-00

5th grade - March 24, 2000

School Name _____ Team # _____

Proctor Name _____ Room # _____



Relay Contest - Score Sheet

Practice relay

370

Answer for relay #1

252

Answer for relay #2

\$60 or 60

"Math is Cool" Championships -- 1999-00



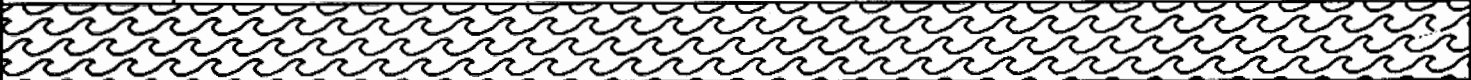
5th grade - March 24, 2000

Key

School Name _____ Team # _____

Proctor Name _____ Room # _____

Mental Math - Score Sheet

1	154
2	24
3	5
4	16
	
1	27
2	72
3	48
4	9
	
1	2200
2	3:14 P.M.
3	5
4	23
	
1	48
2	2640
3	35
4	11

"Math is Cool" Championships-1999-00

Sponsored by: Basic American Foods

5th Grade - March 24, 2000

<u>College Knowledge Bowl Questions #1</u>		
1	Caleb's 2000 nickels are worth what amount in dollars?	100 or \$100
2	What is 3.14159 rounded to the nearest thousandth?	3.142
3	What is the sum of the reduced numerator and denominator of $\frac{6}{36}$?	7
4	What is 17×11 ?	187
5	If 21 marbles fit in a sock, how many marbles fit in 3 pair of socks?	126
6	If today is Friday, what day of the week will it be 50 days from yesterday?	Friday
7	How many ways can you rearrange the letters in "POTATO"?	180
Number <u>8</u> is an extra question. Only use it if needed.		
8	What is $2 \times 4 \times 8$?	64

"Math is Cool" Championships-1999-00

Sponsored by: Basic American Foods

5th Grade - March 24, 2000

<u>College Knowledge Bowl Questions #2</u>		
1	You went to sleep at 11:01p.m. and woke up at 10:16a.m. How many minutes did you sleep?	675
2	Mr. Johnson is 6 feet 2 inches tall. How many inches is that?	74
3	Nick did 5 math assignments, each had 7 problems. Daniel did 10 assignments, each had 5 problems. How many problems did they do together?	85
4	What is the tens digit of the product of 24 and 16256?	4
5	What is the largest remainder possible when a number is divided by 2323?	2322
6	How many quarters are worth 35 dimes?	14
7	How many even numbers are between 15 and 83?	34
Number 8 is an extra question. Only use it if needed.		
8	If four dice are rolled, how many different sums are possible?	21

"Math is Cool" Championships-1999-00

Sponsored by: Basic American Foods

5th Grade - March 24, 2000

<u>College Knowledge Bowl Questions #3</u>		
1	Math class went from 11:42 a.m. to 12:33 p.m. How many minutes long was math class?	51
2	In the fun run, "Einstein's Miles," each participant drinks an average of two cups of water. If there are 128 participants, how many gallons of water are consumed?	16
3	What is the remainder when 234 is divided by 3?	0
4	The difference between two numbers is 407. If the larger number is 850, what is the smaller number?	443
5	How many positive primes have a remainder of zero when divided by 11?	1
6	Grandma Vicki has a rectangular garden 24 foot by 8 foot and needs to put a fence post every 4 feet. How many fence posts are needed for her garden?	16
7	If 3 oranges cost \$2.25, how many cents would one orange cost?	75
Number 8 is an extra question. Only use it if needed.		
8	What is the sum of the first 4 prime numbers?	17