

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Sponsored by:

GENERAL INSTRUCTIONS applying to all tests:

- Good sportsmanship is expected throughout the competition by all involved (competitors and observers). Display of poor sportsmanship will result in disqualification.
- Competitors may not use calculators or any other aids on any portion of this contest.
- Unless stated otherwise:
 - All answers are integers, and any non-integer answers will be "coded" as integers.
 - For 4th grade and up, all fractions and ratios must be reduced to simplest form, all radicals must be simplified, and all denominators must be rationalized.
 - Do not round or approximate answers. Leave answers in terms of π or other irrational quantities (e.g., $\sqrt{2}$), where applicable.
- Units are not necessary as part of your answer. However, if you choose to use units, they must be correct.
- Record all answers on the colored cover sheets in the answer column only.
- Be sure that the student name, school, team number, etc. has been filled out at the top of each answer 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 be scored as a 0.

FINAL SCORES AND AWARDS

Individual awards are determined by both the Mental Math and Individual Test scores. Individual ties are broken based on the following, in this order: total scaled individual points, total number of correct answers on the Individual Test, Mental Math raw score, number of correct answers from Individual Test #31-40, number of correct answers from Individual Test #16-30, highest numbered question answered correctly on the Individual Test working backwards from #40.

Team (School) awards are based on the highest score from amongst each of the school's "teams of 4 students" in each event and is calculated as $2 \cdot (\text{Sum of highest 3 Mental Math scores}) + 2 \cdot (\text{Multiple Choice}) + 6 \cdot (\text{Team}) + 1 \cdot (\text{Triple Jump}) + 1 \cdot (\text{College Bowl})$, for approximate weights of 25%, 20%, 30%, 15% and 10% respectively. Team ties are broken based on highest event score in order of the events, starting with Mental Math.

MENTAL MATH TEST - 30 sec./quest., 8 problems, ~8%/25% of individ./team scores

The proctor will read each question twice. You may not do any writing or talking while arriving at a solution. Record only your answer on your answer sheet. You may not change, cross out, erase, or write over an answer once you have written it down. The maximum wait time is 30 seconds after completion of the second reading of the question. Correct answers receive 1 point.

INDIVIDUAL TEST - 35 minutes, 40 problems, ~92% of individual score

When you are prompted to begin, tear off the colored answer sheet and begin testing. No talking during this individual test. You will be given a 5 minute time warning. Correct answers receive 2 points for problems 1-30 and 3 points for 31-40 (in the scaled score).

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Final Score (out of 8)

Room #

School Name

Student Name

Team #

Mental Math - ~25% of team score & ~8% of individual score

All students in the room will concurrently be asked the same eight questions in this individual test. When it is time to begin, the proctor 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 or her pencil down, the maximum wait time is 30 seconds after completion of the second reading of the question before the next question is read. You may continue to work on a problem (in your head) while the next question is being read. The raw score is 1 point per correct answer.

STUDENT: DO NOT WRITE IN SHADED REGIONS (or anywhere else, other than the answer box)

Answer		Scorer 2	Scorer 1
1			
2			
3			
4			
5			
6			
7			
8			
4th grade	TOTAL:		

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Key

Mental Math Contest – Answer Key

30 seconds per question – ~25% of team score & ~8% of individual score

SCORERS – Write-overs, Cross-outs, and Erasures Must be Marked Incorrect (0)
Bracketed items [...] in the answer key are optional.

4th grade

Answer	
1	9
2	11
3	88 [keys]
4	20 [boys]
5	24
6	5 [minutes]
7	30 [inches]
8	120 [yards]

What is one plus two plus six?

What is the fifth prime number?

A piano has thirty-six black keys and fifty-two white keys. How many total keys are on a piano?

The ratio of boys to girls in a math class is two to one. If there are thirty total students in the class, how many are boys?

What is twenty percent of one hundred twenty?

How many minutes are in one third of one quarter of an hour?

In inches, what is the perimeter of a right triangle with leg lengths five inches and twelve inches?

A football field consists of a playing area that is one hundred yards long with a thirty-foot long endzone on each end of the field. How many total yards long is a football field?

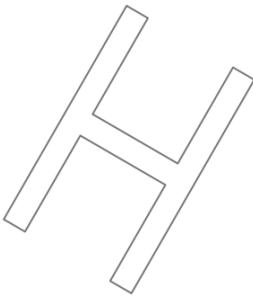
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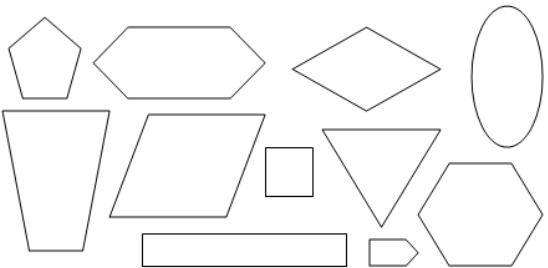
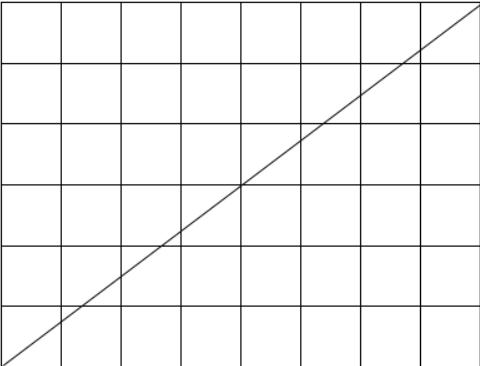
Individual Contest

Record all answers on the colored cover sheet. 35 minutes, 40 problems, ~92% of individual score.

No talking during this individual test. A 5-minute time warning will be given.

Questions 1-30: 2 points each	
1	Round the following number to the nearest thousand: 65624
2	What is the 5 th number in an arithmetic sequence that begins with 2, 5, 8, ...?
3	Kavya has 5 suits and 2 pairs of shoes. How many different combinations of 1 suit and 1 pair of shoes could she wear to a job interview?
4	Evaluate: $17 + (5 \times 10)$
5	What is 10% of 200?
6	A regular hexagon and an equilateral triangle have the same side length. How many times greater is the area of the hexagon than that of the triangle?
7	How many times does the letter "f" appear in the following quote? "Finishing problems as soon as they find you is one of fifteen habits that can help a forgetful fellow."
8	What is the area in square inches of a right triangle with leg lengths 3 inches and 12 inches?
9	A gameboard is made up of two non-overlapping squares that are connected at one edge, one with an area of 10 square inches, and another with a side length of 11 inches. What is the total area of the game board, in square inches?
10	Maddie randomly picks one of the following letters. What is the probability in percent that she picks a vowel? A, B, C, D, E, F, G, H, I, J
11	What is the mode of the following set? {11, 10, 101, 1101, 1011, 1101, 1110, 111, 100}
12	How many of the first 25 counting numbers are divisible by 4?
13	How many lines of symmetry does the following shape have? 

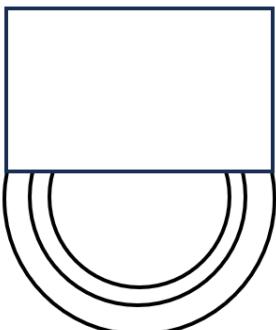
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14	Ella is driving down the highway. If she drives for 120 miles at a constant speed of 60 miles per hour, and stops in the middle for 10 minutes to get gas, how many total minutes did her trip take?
15	Aurora is collecting food donations for a holiday drive. Every box contains enough food for 6 people. What is the minimum number of full boxes needed for 237 people?
16	Zayn, Hank and Niko are all on the starting lineup of their basketball team. There are 3 other members on the team. In how many ways can the other 2 players on the starting lineup be chosen?
17	Nate is two years older than three times his daughter, Alora's, age. If Alora is 16 years old, how old is Nate, in years?
18	How many counting numbers 'x' make the following inequality true? $1 < x < 9$
19	How many of the following shapes are not quadrilaterals? 
20	How many of the following numbers are divisible by 8? 8, 25, 100, 512, 24, 64, 802
21	Rohit has \$74 and Sahed has \$100. How many dollars would Sahed need to give Rohit so that they both have the same amount of money?
22	What is the length in inches of the diagonal line in the following figure, given that the grid is composed of squares with side length 1 inch? 
23	Summer opens an ice cream stand. She offers 5 flavors, where customers have to get two scoops, each one a different flavor. She also has two choices of cones available. How many possible ice cream orders does Summer offer? The order of the scoops does not matter.
24	Juniper eats $\frac{1}{8}$ of a pie, while Madeline eats $\frac{2}{16}$ of it. What percentage of the pie is left after Juniper and Madeline have eaten their portions?

Continued on next page.

25	<p>In the grid of unit squares shown here, how many more white squares are there than black squares?</p>
26	What is the value of $4^5 - 5^4$?
27	Sahil has 4 keys and 4 locks in his desk drawer, and each key opens exactly one lock. What is the maximum number of times he <u>must</u> try a key in a lock in order to match all 4 keys to their locks?
28	Using at least one each of pennies, nickels, dimes, and quarters, what is the fewest number of coins needed to equal the value of one dollar, using only pennies, nickels, dimes, and quarters?
29	There are 2.54 centimeters in 1 inch. How many centimeters are in 50 feet?
30	On the day he was born, Ethan solved one math problem. On each following day, he solved one more math problem than he did the previous day. Assuming no leap years, how many math problems did he solve before he turned 1?
Challenge Questions: 3 points each	
31	What comes next in the following sequence: 11, 34, 17, 52, 26, 13, 40, 20, 10, 5, ...
32	A random integer 'x' is picked from the following set. What is the probability that x% of 20 is an integer, as a percentage? {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
33	Liana has 5 identical pairs of red shoes, 12 identical pairs of white shoes, and 3 identical pairs of brown shoes. Each pair consists of one left shoe and one right shoe. If she takes individual shoes out of her shoe rack randomly and without replacement, how many shoes does she have to take out to be sure that she has taken out a pair of red shoes?
34	Alexander has to complete his math homework, his English homework, and his social studies homework all over one weekend, each of which will take two hours to do. On Saturday, he finishes half of his English homework, two-thirds of his math homework, and 70 minutes of his social studies homework. How many minutes of homework does he have to do on Sunday?
35	Two consecutive integers have a product greater than 100 but less than 200. What is the smallest possible sum of these two integers?
36	The mean of three numbers is 20. If two of the numbers are 8 and 13, what is the third number?
37	An isosceles triangle has at least one angle that measures 56 degrees. What is the largest possible angle, in degrees, that could be in the triangle?
<i>Continued on next page.</i>	

- 38** How many ways are there to color the following diagram choosing from red, blue, green and yellow, such that each section is colored a solid color, and no two neighboring sections have the same color? A neighboring section is one that shares a boundary with another section.



- 39** Garfield writes the words representing the integers 1 through 9 in alphabetical order. Then he replaces each word with the number it represents to form a 9-digit number. What is this 9-digit number?

- 40** When a certain positive integer is divided by 24, the remainder of that division has a remainder of 2 when divided by 6. What is the sum of all possible values of this integer that are less than 25?

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KEY

Individual Contest - Answer Key

SCORERS: Bracketed [...] items in answer key are optional. Just mark the score as 0 or 1 and add up those values to reflect total correct.
First Scorer – use the right-hand columns so 2nd scorer can do a blind scoring.

	Answer
1	66000
2	14
3	10 [combinations]
4	67
5	20
6	6 [times]
7	8 [times]
8	18 [sq inches]
9	131 [sq. inches]
10	30 [%]
11	1101 [= mode]
12	6 [numbers]
13	2 [lines of symmetry]
14	130 [minutes]
15	40 [boxes]

	Answer
16	3 [ways]
17	50 [years]
18	7 [counting numbers]
19	6 [are not quadrilaterals]
20	4 [are divisible by 8]
21	13 [\$]
22	10 [inches]
23	20 [ice cream orders]
24	75 [%]
25	16 [more white squares]
26	399
27	6 [times]
28	11 [coins]
29	1524 [cm]
30	66795 [math problems]

	Answer
31	16
32	20 [%]
33	36 [shoes]
34	150 [minutes]
35	-27
36	39
37	68 [°]
38	48 [ways]
39	854917632
40	44

4th grade – March
2025

"Math Is Cool" Championships – 2024-25

Total Correct (all columns)

Room #

SCHOOL NAME

STUDENT NAME

Team #

Individual Contest - Score Sheet

STUDENTS: DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
1-15 TOTAL:			

	Answer	1 or 0	1 or 0
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
16-30 TOTAL:			

	Answer	1 or 0	1 or 0
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
31-40 TOTAL:			

4th grade – March 2025

Scorers: Just score as 0 or 1 and add up those values (i.e., just work with number correct).

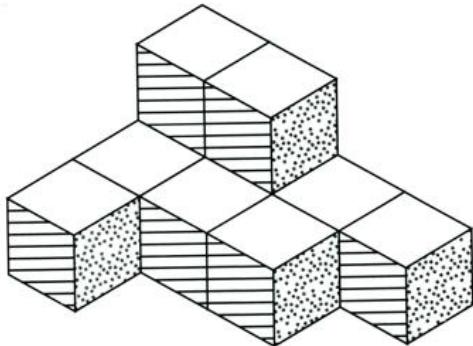
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Team Multiple Choice Contest

USE THE FOLLOWING INFORMATION TO SOLVE PROBLEMS #1 THROUGH #4.

The following figure is made up of unit cubes glued together. Each cube has side lengths of 1 unit. The back sides of the figure are smooth, there are no missing blocks.



1	How many total unit cubes are in the figure?				
	A) 8	B) 9	C) 10	D) 11	E) Answer not given.
2	The base of the figure is the bottom side that it is sitting on. What is the perimeter around the base of the figure?				
	A) 14 units	B) 16 units	C) 17 units	D) 19 units	E) Answer not given.
3	What is the surface area of the figure, including all sides and the base?				
	A) 32 square units	B) 36 square units	C) 40 square units	D) 44 square units	E) Answer not given.
4	What is the minimum number of unit blocks that would have to be added to the figure to make a larger figure that is a cube?				
	A) 52	B) 54	C) 68	D) 72	E) Answer not given.

Continued on Next Page

USE THE FOLLOWING INFORMATION TO SOLVE PROBLEMS #5 THROUGH #8.

Yahtzee is a dice game played with 5 dice. When a player begins their turn, they throw all 5 dice. The player can choose to keep any, all, or none of the 5 dice, pick up the ones they don't want to keep, and throw them again. They get to repeat this one more time, for a total of three throws per turn.

The player is trying to complete various categories on the scorecard to earn points. The scorecard is split into 2 sections: upper and lower. In the Upper Section, players complete six categories, trying to get as many of each number as they can.

For example, if they end their turn with three 4s, the score in that category would be $4 + 4 + 4 = 12$. Or if they end their turn with four 1s, the score in that category would be $1 + 1 + 1 + 1 = 4$.

UPPER SECTION		HOW TO SCORE
Aces		= 1 Count and Add Only Aces
Twos		= 2 Count and Add Only Twos
Threes		= 3 Count and Add Only Threes
Fours		= 4 Count and Add Only Fours
Fives		= 5 Count and Add Only Fives
Sixes		= 6 Count and Add Only Sixes
TOTAL SCORE		→
BONUS	If total score is 63 or over	SCORE 35
TOTAL	Of Upper Section	→

- 5 On Katya's third and final roll, she ends up with the following numbers showing on the top of the dice. She decides to take 'Chance' on the Lower Section, which is the sum of all 5 dice. What is her score for 'Chance'?
- A) 16 B) 17 C) 18 D) 20 E) Answer not given.
- 6 In the Upper Section, if players get a TOTAL SCORE of 63 or more, they get a bonus of 35 points. Amara currently has recorded scores for two 1s, three 2s, three 3s, three 4s, and two 5s. What is the minimum number of 6s that she must score in order to get her 35 bonus points?
- A) 1 B) 2 C) 3 D) 4 E) Answer not given.
- 7 After two rolls, Amara has the following numbers on her dice: 2, 3, 5, 5, 6. She keeps the 5, 5, and 6, and picks up the other two dice to throw them again. After that final throw, what is the probability that she has a sum on the five dice of at least 24, to take as her 'Chance' score?
- A) 1/6 B) 5/36 C) 50% D) 15/36 E) Answer not given.
- 8 Amara ends up with a final score of 241, and Katya ends up with a final score of 197. How many more points did Amara earn than Katya?
- A) 34 B) 44 C) 47 D) 52 E) Answer not given.

Continued on Next Page

- 9 For each of the number pairs shown here, fill in the blank between the two numbers with a "more than" ($>$), "less than" ($<$) or "equal to" ($=$) symbol.

How many "more than" symbols are there in total?

433 423

929 992

551 515

863 863

765 785

178 173

898 868

383 833

117 117

255 246

569 596

627 726

A) 6 B) 7

C) 8

D) 9

E) Answer not given.

- 10 Here is a fun mathematical trick you can play on your friends! Have a friend choose a whole number. Then have them take the following steps, one at a time in order:

1. Add 6 to their number.
2. Triple that value.
3. Decrease that value by 3.
4. Divide that value by 3.
5. This is the "final result".

If your friend tells you their "final result", you will be able to tell them what number they started with!

Which of the following statements is true, comparing the "final result" to the original number that they started with?

- A) The final result is the same as the original number.
B) The final result is always 2 less than the original number.
C) The final result is always 5 more than the original number.
D) The final result is always 5 more than the original number if the original number is odd, and is always 6 more than the original number if the original number is even.
E) Answer not given.

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Key

Team Multiple Choice Contest – Answer Key

4th grade

Correct responses are worth 2 points, incorrect responses are worth -1 point, and absence of a response is worth 0 points.

Answer	
1	C
2	A
3	B
4	B
5	B
6	D
7	D
8	B
9	E [5]
10	C

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Final Score (out of 20)

Room #

School Name

Team #

Team Multiple Choice Contest – 15 minutes – ~20% of team score

You will have 15 minutes to answer 10 multiple choice questions as a team. This test is the only test where you will be penalized for incorrect responses. You will receive two points for a correct letter response, zero points for leaving it blank, and minus one point for an incorrect response. When you are prompted to begin, tear off the colored answer sheet, pass out a copy of the test to each team member, and begin testing. **ONLY a letter response should be listed as an answer on this answer sheet. Correct responses are worth 2 points, incorrect responses are worth -1 point, and absence of a response is worth 0 points.**

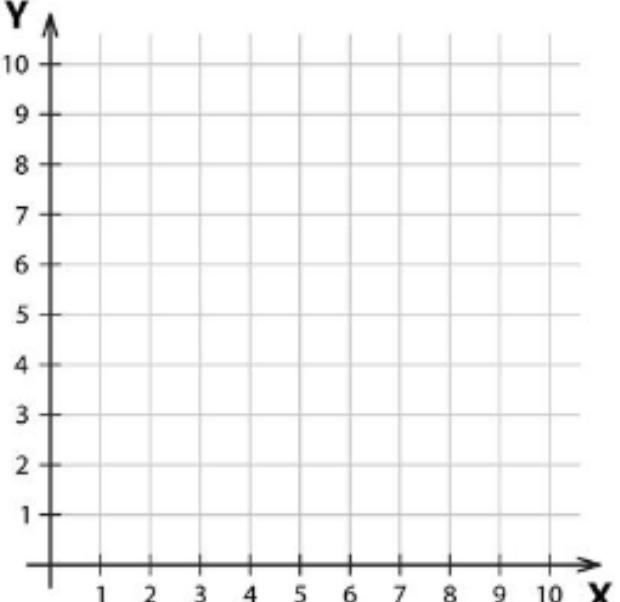
STUDENTS: DO NOT WRITE IN SHADED REGIONS

Answer		Scorer 2	Scorer 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
4th grade		TOTAL:	

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Team Contest

1	Neal practices the violin for 3 hours a day, while Asher practices for 5 hours a day. How many more hours does Asher practice than Neal in one week?															
2	Vaani's kitchen is 5.8 meters long and 4 meters wide. New vinyl for the floor costs \$30 per square meter. How much will it cost, in dollars, to buy enough vinyl to cover the floor?															
3	Vista Elementary has four 3 rd grade classes. The following chart shows the breakdown into boys and girls per class. How many more girls than boys are there in the 3 rd grade at Vista Elementary?															
	<table border="1"><thead><tr><th>3rd Grade Class</th><th>Boys</th><th>Girls</th></tr></thead><tbody><tr><td>Ms. Smith</td><td>12</td><td>8</td></tr><tr><td>Mr. Jones</td><td>14</td><td>13</td></tr><tr><td>Ms. Williams</td><td>8</td><td>29</td></tr><tr><td>Ms. Melton</td><td>14</td><td>14</td></tr></tbody></table>	3rd Grade Class	Boys	Girls	Ms. Smith	12	8	Mr. Jones	14	13	Ms. Williams	8	29	Ms. Melton	14	14
3rd Grade Class	Boys	Girls														
Ms. Smith	12	8														
Mr. Jones	14	13														
Ms. Williams	8	29														
Ms. Melton	14	14														
4	What is the maximum number of dimes that you could receive as change if you pay for a \$4.95 Frappuccino with a 10-dollar bill?															
5	Santiago is building a horizontal fence that is 176 feet long. If he wants to place a fence post every 16 feet, including at the beginning and end of the fence, how many fence posts will he need?															
6	A colony of bacteria starts with one bacterium at time 0, then doubles every hour. For example, at 1 hour there will be 2 bacteria, and at 2 hours there will be 4 bacteria. What is the smallest whole number of hours such that the colony will have over 1,000 bacteria?															
7	Alphonse is going to plot points with coordinates (x, y) on the following grid. The points will follow these rules: <ol style="list-style-type: none">1. x and y are integers2. $x + y$ is a positive even value3. $x + y$ is less than 7 How many total points will Alphonse plot? 															

Continued on next page.

8	<p>How many different rectangles can be constructed that have integer side lengths, and that have an area of 20 square units or less? The orientation of the rectangle does not matter, for example a 1x5 rectangle is the same as a 5x1 rectangle.</p>
9	<p>When the date is written in Month/Day/Year format, with no leading zeros in front of the month or day, the date is called a palindromic date if the number reads the same forwards and backwards. For example, January 10th, 2011 is written as 1/10/2011, or 1102011, which reads the same in either direction.</p> <p>How many palindromic dates are there between January 1, 2025, and January 1, 2030?</p>
10	<p>A bag contains 75 blue gummy worms, some green gummy worms, and some orange gummy worms. If one gummy worm is randomly selected, the probability that it is green is 35%, and the probability that it is orange is 50%.</p> <p>How many total gummy worms are in the bag?</p>

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Key

Team Contest – Answer Key

4th grade

Answer	
1	14 [hours]
2	696 [\$]
3	16 [more girls]
4	50 [dimes]
5	12 [fence posts]
6	10 [hours]
7	15 [points]
8	35 [rectangles]
9	5 [palindromic dates]
10	500 [gummy worms]

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Final Score (out of 10)

Room #

School Name

Team #

Team Contest – 15 minutes – ~30% of team score

When you are prompted to begin, tear off the colored answer sheet and give a copy of the test to each of your team members and begin testing. Each problem is scored as a 1 or 0. Record all answers on this colored answer sheet.

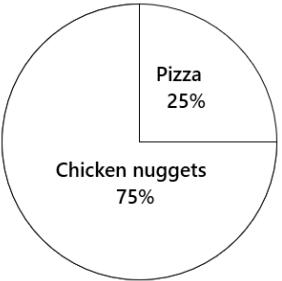
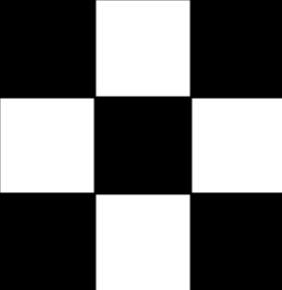
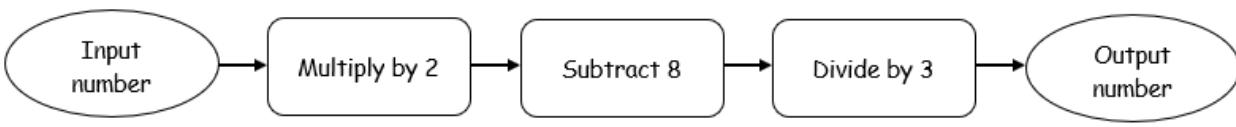
STUDENTS: DO NOT WRITE IN SHADED REGIONS

Answer		Scorer 2	Scorer 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
4th grade		TOTAL:	

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Linda Moore Triple Jump

1	Put two numbers from the list into the boxes, to complete the division problem. Which number goes in the box with the question mark? 2, 3, 12, 24, 30, 40, 54, 77	$\boxed{?} \div \boxed{} = 8$
2	Mrs. Yockey's students took a survey to see if their favorite cafeteria lunch was pizza or chicken nuggets. The results are shown in the graph. If Mrs. Yockey has 24 students, how many of them prefer chicken nuggets?	
3	How many inches are in $3\frac{1}{2}$ feet?	
4	A large square is divided into nine identical smaller squares. The total area of the five small black squares is 20 square centimeters. In square centimeters, what is the total area of the large square?	
5	Athena and Manuel are running laps around their track at Bridgeport Elementary School. For every lap Manuel runs, Athena runs two laps. If Manuel ran five laps, what is the combined number of laps that they ran?	
6	Kylee is collecting apples from the 5 trees in her backyard. Each tree contains the number of apples shown in the figure. Kylee can only carry a maximum of 11 apples per trip, and she can only visit one tree per trip. What is the maximum number of apples that Kylee can collect in 10 trips?	
7	A function machine takes an input number and does the following mathematical operations in the order shown. If the output number is 10, what was the input number?	

Continued on next page.

8	What is the smallest counting number whose positive integer factors sum to more than twice the number itself?
9	Rhoda is reading <i>Bag of Bones</i> by Stephen King, which has 732 pages. She reads 2 pages on the first day, 4 the second, 6 the third, and so on, each day reading 2 more pages than the day before, until she finishes the book. How many days will it take her to finish the book?
10	<p>When the sum of a set of integers equals zero, we call that set a zero-sum set. For example, the integers 7, -3 and -4 form a zero-sum set, because $7 + (-3) + (-4) = 0$.</p> <p>Out of the following set of integers, how many different zero-sum sets can be made? A number can only be used one time per zero-sum set, but each number can be used in multiple different zero-sum sets.</p> <p>10, -3, -11, 2, -8, 6, 5, -1</p>

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Key

Linda Moore Triple Jump - Answer Key

4th grade

Answer	
1	24
2	18 [students]
3	42 [inches]
4	36 [sq cm]
5	15 [laps]
6	108 [apples]
7	19
8	12
9	27 [days]
10	7 [zero-sum sets]

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Final Score (out of 10)

Room #

School Name

Team #

Linda Moore Triple Jump - 15 minutes - ~15% of team score

When you are prompted to begin, tear off the three colored answer sheets and give a copy of the test to each of your team members and begin testing. Record all answers on this colored answer sheet. This Submittal #1 will be collected after 5 minutes.

SUBMITTAL #1

STUDENTS: DO NOT WRITE IN SHADED REGIONS

Answer		Scorer 2	Scorer 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
4th grade		TOTAL:	

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Final Score (out of 10)

Room #

School Name

Team #

Linda Moore Triple Jump - 15 minutes - ~15% of team score

This Submittal #2 will be collected after 10 minutes.

SUBMITTAL #2

STUDENTS: DO NOT WRITE IN SHADED REGIONS

Answer		Scorer 2	Scorer 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
4th grade		TOTAL:	

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Final Score (out of 10)

Room #

School Name

Team #

Linda Moore Triple Jump - 15 minutes - ~15% of team score

This Submittal #3 will be collected after 15 minutes.

SUBMITTAL #3

STUDENTS: DO NOT WRITE IN SHADED REGIONS

Answer		Scorer 2	Scorer 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
4th grade		TOTAL:	

"Math Is Cool" Championships – 2024-25

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Room # _____ School Name _____ Team # _____

Total Score for Each Round

College Bowl #1 (10 Possible)	College Bowl #2 (10 Possible)	College Bowl #3 (10 Possible)

DO NOT USE TALLY MARKS ON THIS SHEET. WRITE THE TOTAL SCORE FOR EACH ROUND.

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Room # _____ School Name _____ Team # _____

Total Score for Each Round

College Bowl #1 (10 Possible)	College Bowl #2 (10 Possible)	College Bowl #3 (10 Possible)

DO NOT USE TALLY MARKS ON THIS SHEET. WRITE THE TOTAL SCORE FOR EACH ROUND.

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Proctor
Copy

Mental Math Contest

MENTAL MATH - 30 seconds per question - ~25% of team score & ~8% of individual score

All students in the room will concurrently be asked the same eight questions in this individual test. When it is time to begin, the proctor 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 or her pencil down, the maximum wait time is 30 seconds after completion of the second reading of the question before the next question is read. You may continue to work on a problem (in your head) while the next question is being read. The raw score is 1 point per correct answer.

1	What is one plus two plus six?	
2	What is the fifth prime number?	
3	A piano has thirty-six black keys and fifty-two white keys. How many total keys are on a piano?	
4	The ratio of boys to girls in a math class is two to one. If there are thirty total students in the class, how many are boys?	
5	What is twenty percent of one hundred twenty?	
6	How many minutes are in one third of one quarter of an hour?	
7	In inches, what is the perimeter of a right triangle with leg lengths five inches and twelve inches?	
8	A football field consists of a playing area that is one hundred yards long with a thirty-foot long endzone on each end of the field. How many total yards long is a football field?	

"Math Is Cool" Championships – 2024-25

4th grade – March 2025

Key

COLLEGE BOWL ROUND #1

#	Problem	Answer
1	What is the sum of twenty and twenty-five?	45
2	How many digits are zeros in the product of one hundred twenty-five and eight?	3 [zeroes]
3	What is the next number in the following sequence: one, five, nine, thirteen, and so on?	17
4	What is the measure of the smaller angle in degrees between the two hands of an analog clock at five o'clock PM?	150 [$^{\circ}$]
5	Rya is twenty miles ahead of Oakley while walking at four miles per hour. Oakley is biking at nine miles per hour in the same direction. How many hours will it take for Oakley to catch up to Rya?	4 [hours]
6	What is the median of the following data set: three, seven, five, five, two, one	4 [= median]
7	There are approximately two point five four centimeters in one inch. As an integer, how many full inches are in ten centimeters?	3 [inches]
8	What is the perimeter in meters of a square with side length two point five meters?	10 [meters]
9	How many ways are there for Kali, spelled K-A-L-I, to rearrange the letters in her name, as long as the K stays in the first position?	6 [ways]
10	Two turtles are worth five monkeys. One monkey is worth six penguins. How many penguins are four turtles worth?	60 [penguins]

"Math Is Cool" Championships – 2024-25

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Key

COLLEGE BOWL ROUND #2

#	Problem	Answer
1	There are twelve people behind Jalisa in line, and thirty-one ahead of her. How many people are in the line?	44 [people]
2	On silly sock day, Jingchu chooses two different colored socks. He has pairs of socks in six different colors. In how many ways can he pick two different colored socks?	15 [ways]
3	How many cups are in four quarts?	16 [cups]
4	How many degrees does the minute hand on an analog clock move from seven fifteen PM to seven thirty-five PM on the same day?	120 [degrees]
5	How many unit cubes are needed to create a larger cube with edge length three units?	27 [unit cubes]
6	Rayden needs to cut a long steel rod into thirty-five equal pieces. It takes three minutes to make one cut. How many minutes will it take to complete all of the cuts?	102 [minutes]
7	What is the next term in the sequence that begins with: one, three, seven, thirteen, twenty-one, and so on?	31
8	What is the area in square centimeters of a rectangle that measures seven centimeters by six centimeters?	42 [sq. cm]
9	A clock chimes once every hour on the hour, starting at twelve AM. How many times will it chime between two fifteen AM and three twenty-five PM on the same day?	13 [times]
10	What is the greatest common factor of twelve and six?	6 [= GCF]

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Key

COLLEGE BOWL ROUND #3

#	Problem	Answer
1	A student finds the sum of a number and its additive inverse. What is the result?	0
2	Ty has a five-dollar and a two-dollar bill, along with three dimes. What is the total amount of money he has, in cents?	730 [cents]
3	How many times larger is the area of a square with side length four units than one with side length two units?	4 [times]
4	How many positive integers less than one hundred contain the digit two?	19 [positive integers]
5	What is the greatest common factor of twenty-four and thirty-two?	8 [= GCF]
6	If X minus Y equals five, and X equals seven, what does Y equal?	2 [= y]
7	If the probability that Della has a ham sandwich today for lunch is one-fourth, expressed as a fraction, what is the probability that she does not have a ham sandwich for lunch today, expressed as a percent?	75 [%]
8	Two of the three interior angles of an isosceles triangle have measures of eighty degrees and twenty degrees. What is the measure of the third angle, in degrees?	80 [degrees]
9	How many integers from one to one hundred are divisible by three, five, and seven?	0 [integers]
10	Oona is lighting fireworks on New Years Eve. If she lights five per hour, how many can she light by midnight, if she starts at seven PM?	25 [fireworks]

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Key

COLLEGE BOWL ROUND #4

#	Problem	Answer
1	Bjorn buys Swedish meatballs for two dollars and forty-five cents while paying with a five dollar bill. How many cents does he receive in change?	255 [cents]
2	What is the sum of the cube root and the square root of sixty-four?	12
3	A smoot is a unit of measurement that is five feet and seven inches long. How many inches are in a smoot?	67 [inches]
4	Hector is baking cookies, and uses a recipe that calls for two hundred grams of sugar, and twice as many grams of flour. How many total grams of sugar and flour are needed?	600 [grams]
5	What is the largest prime factor of one hundred eleven?	37
6	What is the sum of the first five terms in the arithmetic sequence that begins as follows: two, seven, twelve, and so on.	60 [= sum]
7	What is the radius in inches of the largest circle that can be inscribed in a square with side length six inches?	3 [inches]
8	What is the value of six plus sixteen plus twenty-six?	48
9	What digit is in the tens place of twenty-five times eight?	0
10	Dahlia guesses on a ten question short answer math test and writes the number one for all of her answers. What is the sum of the mean, mode, and median of her answers?	3

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Key

COLLEGE BOWL ROUND #5

#	Problem	Answer
1	What is the product of twelve and twenty-one?	252
2	How many centimeters are in one kilometer?	100,000 [one hundred thousand]
3	What is the perimeter in units of a triangle with side lengths seven, eight and three units?	18 [units]
4	An army of three hundred and sixty ants is marching down the sidewalk. One-third of them stop at a dropped cookie. One-third of the remaining ants turn back. How many ants are left to continue marching down the sidewalk?	160 [ants]
5	If Jasper must eat at least four baby carrots and at most ten baby carrots at dinner, how many different numbers of baby carrots can he eat?	7 [numbers of baby carrots]
6	A rectangle has a perimeter of thirty-six square units and a width of four units. What is the area of the rectangle in square units?	56 [square units]
7	On his last five math tests, Hanzo scored seventy-seven, sixty-five, eighty, eighty-one and sixty-five points. What is Hanzo's median test score in points?	77 [points]
8	If A plus B plus C equals ten, and A equals C equals three, what is the value of B ?	4 [= B]
9	What is the remainder when eight hundred ninety-three is divided by 5?	3 [= remainder]
10	How many right angles does an equilateral triangle have?	0 [right angles]

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Key

COLLEGE BOWL ROUND #6

#	Problem	Answer
1	What is the smallest possible integer degree measure of an obtuse angle?	91 [degrees]
2	A metric ton is one thousand kilograms. An alligator weighs around three hundred sixty kilograms. What is the smallest whole number of alligators that would weigh more than a metric ton?	3 [alligators]
3	Sawyer buys a candy bar for two dollars, excluding tax. If the sales tax is ten percent, how much does he pay in tax, in cents?	20 [cents]
4	What is the average of the following numbers? Fourteen, seventeen, eighteen, nineteen, twenty-two.	18 [= average]
5	What is three point two five times ten thousand?	32,500 [thirty-two thousand five hundred]
6	A hamburger and a large drink cost five dollars together. The hamburger costs three dollars more than the drink. How many cents does the drink cost?	100 [cents]
7	What is the maximum number of intersections that four lines can have?	6 [intersections]
8	The Fibonacci sequence is a sequence in which each term is the sum of the previous two terms. The first five Fibonacci numbers are zero, one, one, two, three. What is the sum of the first eight Fibonacci numbers?	33
9	What is the units digit of five raised to the fourth power?	5 [= units digit]
10	There are five children for every two adults in a park. If there are twelve adults in the park, how many children are there?	30 [children]