"Math is Cool" Championships – 2017-18
February 23, 2018

Total Correct

KEY

5th Grade Individual Contest – Score Sheet

DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1	48		
2	1561		
3	1		
4	24		
5	42 [toys]		
6	13 [days]		
7	47		
8	32 [rupees]		
9	3		
10	11		
11	8:41 AM		
12	-3.15		
13	376 [sq. inches]		
14	⅕		
15	75 [pounds]		
1-15 TOTAL:			

	Answer	1 or 0	1 or 0
16	210		
17	D,B,A,C		
18	60		
19	22 [ounces]		
20	190 [hugs]		
21	21		
22	[$]130.40		
23	0		
24	5		
25	100 [pages]		
26	26		
27	96 [c]		
28	90		
29	[$] 1		
30	45		
16-30 TOTAL:			

	Answer	1 or 0	1 or 0
31	420 [inch³]		
32	27 [snow balls]		
33	22 [days]		
34	404 [inches]		
35	1466		
36	4.8 [hours]		
37	[$] 10		
38	10		
39	3,126		
40	15/32		
31-40 TOTAL:			

5th Grade

"Math is Cool" Championships – 2017-18
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February 23, 2018
5th Grade Mental Math Contest

Follow along as your proctor reads these instructions to you. Your Mental Math score sheet is on the back.

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.*
- *Counting or natural numbers refer to the numbers 1,2,3,4 and so on and do NOT include 0.*
- *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 0.*

Mental Math – 30 sec per question

8 problems read orally to everyone - Approximately 8% of Individual Score - 25% of team score

*You may NOT be seated next to anyone from your school. If you are MOVE NOW to avoid being disqualified! 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/her pencil down, the maximum wait time is 30 seconds after completion of 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 will be asked the same eight questions. Individual scores used to determine individual placing will be determined by the sum of the Mental Math score and the Individual Test score for each individual. In addition, the top three Mental Math scores from one team will be totaled and doubled and will contribute to 25% of the team score.*

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5th Grade – February 23, 2018
Mental Math Contest

Mental Math – 30 sec per question

8 problems read orally to everyone - Approximately 8% of Individual Score - 25% of team score

You may NOT be seated next to anyone from your school. If you are MOVE NOW to avoid being disqualified! 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/her pencil down, the maximum wait time is 30 seconds after completion of 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 will be asked the same eight questions. Individual scores used to determine individual placing will be determined by the sum of the Mental Math score and the Individual Test score for each individual. In addition, the top three Mental Math scores from one team will be totaled and doubled and will contribute to 25% of the team score.*

#	Problem
1	What is 6 times 5 times 9?
2	What is the quotient of 56 divided by 8?
3	What is the perimeter of a rectangle with sides of length 8 inches and 6 inches?
4	A sloth eats 3 eucalyptus leaves every day. How many leaves will 2 sloths eat in 1 week?
5	A fair six-sided die is rolled twice. What is the probability of rolling a 4 followed by a 3?
6	How many minutes will it take me to bike 9 miles if I am biking at a speed of 12 miles per hour?
7	A group of 4 people has an average of $6 each. If a fifth person joins the group, and now the average is $7 per person, how much money, in dollars, did the fifth person bring to the group?
8	If today is Saturday, then what day will it be 184 days from now?

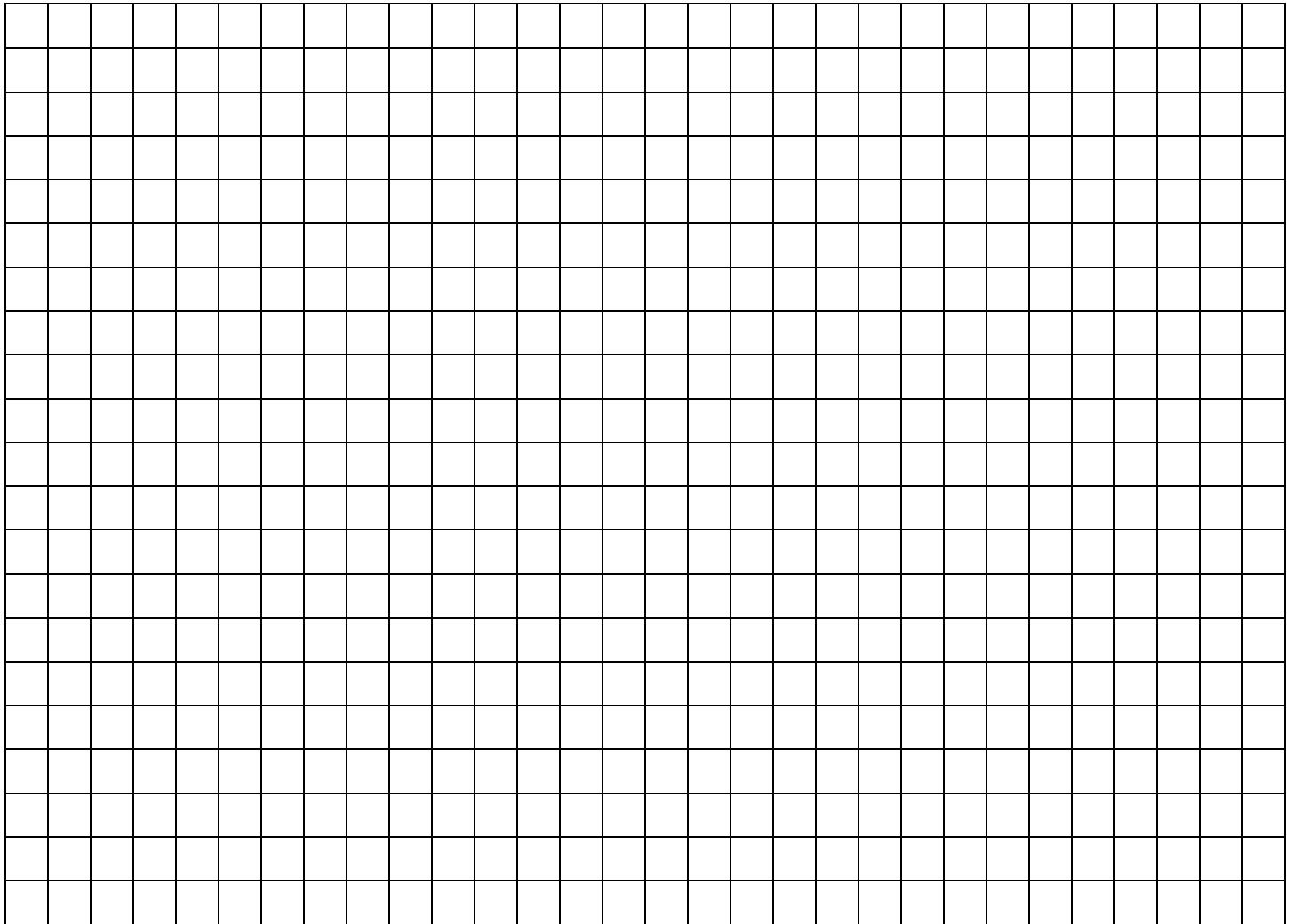# "Math is Cool" Championships – 2017-18

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Individual Contest – 5th Grade

Tear this cover sheet and scratch paper off and fill out the top of the colored answer sheet prior to the start of the test. The graph below is for your use, if needed.

INDIVIDUAL TEST - 35 minutes

You may NOT be seated next to anyone from your school. If you are MOVE NOW to avoid being disqualified! When you are prompted to begin, tear off the colored sheet and begin testing. Make sure your name and school are recorded on the answer sheet. The raw score will be 2 points for correct answers to problems 1-30 and 3 points for 31-40. Record your answers on the score sheet. No talking during the test. You will be given a 5 minute time warning.

"Math is Cool" Championships – 2017-18
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5th Grade – February 23, 2018
Individual Contest

Record all answers on the colored cover sheet.

	Questions 1-30: 2 points each
1	Billy can paint 2 pumpkins every 10 minutes. How many pumpkins can Billy paint in 4 hours?
2	What is 4783 - 3222?
3	Find the product of $\dfrac{23}{16} \cdot \dfrac{17}{19} \cdot \dfrac{19}{23} \cdot \dfrac{16}{17}$
4	What is the sum of the prime numbers between 8 and 14?
5	Dave has 7 machines, each of which can produce 3 toys per hour. How many toys can Dave's machines produce in 2 hours?
6	Belle reads 140 pages a day. If she is reading an 1820-page book, how many days will it take her to finish the book?
7	After 180/8 is reduced to simplest terms, what is the sum of the numerator and denominator?
8	Zelda has 3 pots. One pot has 82 rupees in it. The other two pots have 7 rupees in each of them. What is the average number of rupees in Zelda's pots?
9	Pete has 99 apples. He wants to distribute his apples evenly among his 24 friends, keeping as few apples as possible for himself. How many apples will Pete keep?
10	What is the 5th smallest prime number?
11	It takes me 10 minutes to run one mile. If I start running a half-marathon (13.1 miles) at 6:30 AM, at what time will I finish?
12	What is 3.3 - 6.45?
13	A rectangular prism has dimensions of 8 inches by 10 inches by 6 inches. What is its surface area in square inches?
14	There is a bag with 2 blue balls, 3 red balls, and 5 green balls. David randomly picks 1 ball from the bag, as a fraction, what is the probability that David picks a blue ball?
15	The Sweet-Tooth store has 300 pounds of candy. If 1/4 is chocolate, and 1/2 is gummy worms, how much, in pounds, does the remaining 1/4 weigh?
16	What is the smallest number that is divisible by 2, 3, 5, and 7?

17	Arrange these from smallest to largest (write the letters in the answer): A: 11/3 B: π C: 3.969 D. 33/11
18	I have a square with sides of length 6. What is the sum of the numeric value of the perimeter and the numeric value of the area of the square?
19	A full bottle of water weighs 70 ounces. After Kiara drinks half the water, the bottle weighs 46 ounces. How much does an empty bottle weigh in ounces?
20	Jeff has 19 siblings. If every sibling (and Jeff) hug each other once, then how many total hugs take place?
21	The sum of the ages of Biff and Eho is 73 years. Biff is 31 years younger than Eho. How many years old is Biff?
22	An airline charges 40 dollars plus 3 dollars per 100 miles. A taxi in New York costs 4 dollars plus 30 cents per mile from the airport. If Seattle is 2800 miles away, how much do I pay for a plane flight to New York Airport, and then an 8-mile taxi ride to my hotel?
23	What digit is in the ones place in the product of 9x8x7x6x5x4x3x3x4x5x6x7x8x9?
24	How many 2-digit whole numbers are multiples of both 6 and 9?
25	I have a series of 5 books. The first four books have an average of 125 pages. How long, in pages, is the fifth book if the average number of pages for all 5 books is 120 pages?
26	MA35+82+1EEL=6813. If each letter in the problem represents a different digit, then what is the sum of M+E+A+L?
27	Last month I spent $24 on candy bars that cost 80¢ each, and this month I spent $24 on candy bars that cost $1.20 each. What is the average cost, in cents, of each candy for these 2 months?
28	Of the 100 numbers 1, 2, 3, …, 100, how many are both 5 more than some number in the list *and* 5 less than some other number in the list?
29	An apple costs 4 times as much as a strawberry. If one apple cost $0.50 more than 2 strawberries, then how much, in dollars, does an apple cost?
30	The digit-sum of a whole number is the sum of its digits. How many whole numbers between 9 and 100 have an even digit-sum?

Challenge Questions: 3 points each

31	A rectangular prism has faces with areas of 42 in^2, 60 in^2 and 70 in^2. What is the volume, in cubic inches, of the prism?
32	Beast is throwing snowballs at Belle, who is hiding behind her horse. 4/9 of the Beast's snowballs hit Belle's horse and Belle can dodge 4/5 of the snowballs that don't hit the horse. If 3 snowballs hit Belle, how many snowballs did Beast throw?

33	Ben needs to earn an average of $120 a day in order to meet his savings goal on time. At first, he earns $90 a day. Then he had 6 days left to earn the remaining $1200. How many days did Ben have in all to meet his savings goal?
34	What is the largest possible perimeter of a rectangle that is made of one hundred 2-inch x 2-inch squares?
35	What is the total number of times that the hour hand, minute hand, and second hand go around a circular analog clock in 1 day?
36	Goku can paint an entire house in 12 hours, and Vegeta can paint a same-sized house in 8 hours. How long, in hours, would it take Goku and Vegeta to paint a house if they worked together? Leave answer as a decimal.
37	Trunks had a $1 bill, a $2 bill, a $5 bill, a $10 bill, a $20 bill, and a $50 bill. Trunks had 6 jars where he kept his money, with exactly one bill in each jar. Goten found 5 of these jars and took all the money from them. He kept these bills, and put $2 each in 3 jars and a $10 bill in each of the other 2 jars from which he had taken money. Now Goten has $52 more than he had to start with. How many dollars are in the jar Goten did not find?
38	7 people enter the front door. I write X for each man and O for each woman as they enter. I have 3 X's and 4 O's, with no 2 X's in a row. How many different orders could the X's and O's be written?
39	I wrote a list of consecutive positive integers beginning with 1. I then removed all the multiples of 4, and I had 2,345 integers left. What was the largest integer on my list after the numbers were removed?
40	Bin A contains six candies and two marbles, while Bin B contains three candies and four marbles. If one item is drawn at random from Bin A and placed in Bin B, and then an item is drawn at random from Bin B, what is the probability that the second item chosen is a candy?

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5th Grade – February 23, 2018
Team Multiple Choice Contest

	USE THE FOLLOWING INFORMATION FOR PROBLEMS 1-3: Hermione has a bag filled with potions. She has 5 bottles of Polyjuice Potion, 3 bottles of Felix Felicis, 2 bottles of Veritaserum and 6 bottles of Amortentia.
1	If Hermione randomly picks 1 bottle from the bag, what is the probability that the potion is Veritaserum or Felix Felicis? A) $\frac{5}{16}$ B) $\frac{1}{8}$ C) $\frac{3}{16}$ D) $\frac{1}{16}$ E) $\frac{5}{32}$
2	Hermione randomly picks 2 potions from her bag without replacement. What is the probability that neither of them is Polyjuice Potion. A) $\frac{55}{128}$ B) $\frac{3}{4}$ C) $\frac{11}{16}$ D) $\frac{11}{24}$ E) Answer not given
3	What is the minimum number of bottles she must randomly pick to guarantee she picks 2 of the same type of potion? A) 3 B) 2 C) 5 D) 11 E) Answer not given
	USE THE FOLLOWING INFORMATION FOR PROBLEMS 4 TO 7 : Five kids (Rocky, Davis, Sam, Brandi & Mala) at a pie shop each get a slice of pie in a different flavor (Chocolate Crème, Banana Crème, Apple Spice, Blueberry, or Pecan). Use the hints below to figure out who had what. 1. Mala and Rocky don't like crème. 2. Sam and Davis don't like fruit. 3. Davis did not have Banana Crème. 4. The person who ate the Blueberry pie was not Rocky. 5. Sam Ate the Pecan pie.
4	Which pie did Brandi get? A) Chocolate Crème B) Banana Crème C) Apple Spice D) Blueberry E) Pecan
5	Which pie did Mala get? A) Chocolate Crème B) Banana Crème C) Apple Spice D) Blueberry E) Pecan
6	Which pie did Rocky get? A) Chocolate Crème B) Banana Crème C) Apple Spice D) Blueberry E) Pecan
7	Which pie did Davis get? A) Chocolate Crème B) Banana Crème C) Apple Spice D) Blueberry E) Pecan

8	A campsite has 6 tents for 18 campers. Each tent holds either 2 or 4 campers. Exactly how many of the tents hold 2? A) 4 B) 3 C) 2 D) 1 E) Answer not given
9	The average of three positive integers is 5. What is the greatest possible value of the sum of the squares of the three integers? A) 107 B) 149 C) 197 D) 75 E) 171
10	The product of 3 different primes is always divisible by exactly how many different non-prime numbers greater than 1? A) 1 B) 2 C) 3 D) 4 E) Answer not given

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Team Contest

1	Henry fenced in his rectangular yard with dimensions of 16 feet by 8 feet. Inside the fenced area, he built a sandbox that is 4 feet by 7 feet. In square feet, how much of the fenced area is not covered by the sandbox?
2	Josh is building a regular octagonal fence around his garden. Half of one side of the octagon is 5 feet. If he leaves a 7-foot gap for a gate on one side, how much fencing will he need in feet?
3	Bobby is baking cookies, put them in the oven at 10:53 AM, and removed them at 1:05 PM. How many minutes were the cookies baking in the oven?
4	At a bake sale, there are 4 brownies for every 3 vanilla cupcakes. There are 2 vanilla cupcakes for every 5 chocolate chip cookies. If there are 16 brownies, how many chocolate chip cookies are there?
5	A square with a perimeter of 32 is split into 8 identical triangles, as shown. What is the sum of the area of the 4 shaded triangles?
6	Amy walks from her house to the store, which is a 18-mile walk. At the same time, Brian walks from the store to Amy's house. Amy is walking at 5 miles per hour, while Brian walks at 4 miles an hour. How long, in hours, after they both start walking do they meet each other?
7	Farmer Bill has a field with chickens and cows. If there are 15 heads and 40 legs how many chickens are in the field?
8	Colin has some candy. He gives ½ of his candy to Alexandra. Alexandra then gives ⅔ of her candy to Harrison. Harrison gives ¼ of his candy to Andrew, who already had 10 candies. If Andrew has 14 candies now, then how much candy did Colin have to start?
9	How many distinct ways can you arrange the 5 letters in the word HAPPY?
10	The sum of the digits of my 2-digit counting number can be divided into my number with no remainder. How many different numbers could I be thinking of?

Robert Dirks' Relay Contest – Questions & Key

RELAYS - 5 minutes per relay – 15% of team score

*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
Person 1	What is the sum of 8 and 3?	11
Person 2	What is TNYWG x 3?	33
Person 3	What is the sum of TNYWG and 2?	35
Person 4	What is the sum of the digits of TNYWG?	8
	Relay #1	Answer
Person 1	How many quarters are needed to pay $1.50 using only quarters?	6
Person 2	How many minutes are in TNYWG hours?	360 [minutes]
Person 3	Subtract 100 from 1/3 of TNYWG	20
Person 4	Simplify the fraction $\frac{TNYWG}{36}$ and subtract the numerator from the denominator.	4
	Relay #2	Answer
Person 1	How many feet are in 5 yards?	15
Person 2	What is the area of a rectangle, in square inches, with a length of TNYWG inches and height of 4 inches?	60 [square inches]
Person 3	Divide TNYWG by 5/4, then subtract 7(9-5)	20
Person 4	What is the sum of all the factors of TNYWG?	42

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COLLEGE KNOWLEDGE BOWL ROUND #1 – SET 1

#	Problem	Answer
1	What is ten minus six and seventy-nine hundredths? Answer as a decimal.	3.21
2	Billy needs to buy some pencils for school. If he has five dollars and each pencil costs fifteen cents, what is the largest number of pencils he can buy?	33
3	What is the difference between the number of sides of a pentagon and a triangle?	2
4	What is the area, in square inches, of a triangle with a height of 6 inches and a base of 3 inches?	9 in^2
5	Biff and Eho have $5. They have 2 one-dollar bills, 5 quarters, and 3 dimes. If the rest of their money is made up of nickels, how many nickels do they have?	29
6	If a right triangle has leg lengths of 6 and 8, what is the length of the triangle's hypotenuse?	10
7	One pencil is equal to 2 erasers. An eraser is equal to 3 pens. How many pens are equal to 4 pencils?	24
8	What is three-fifths times two-ninths?	2/15
9	What is the circumference of a circle that has an area of 144π	24π
10	Sally owns 28 pets. 14 of her pets are goldfish, 1/7 of her pets are cats and the rest are dogs. If half of Sally's cats are orange, how many dogs does Sally have?	10

COLLEGE KNOWLEDGE BOWL ROUND #2 – SET 2

#	Problem	Answer
1	Alicia has $174.75. If she gives George two-thirds of her money, how much money did she give George?	[$] 116.50
2	Mike bakes three loaves of bread each day of the week except for Saturdays, when he bakes 5 loaves. How many loaves of bread do he bake in 12 week?	276 [loaves]
3	Mantis shrimps at an aquarium were measured at the following lengths: 31.5 mm, 36 mm, 34.5 mm, 30 mm, 37 mm and 35.5 mm. What is the median length?	35 [mm]
4	How many hours pass from 5:45 pm on to 9:45 am on the following morning?	16 [hours]
5	What is 15 percent of 400?	60
6	30 frogs live in a swamp. 16 of the frogs have blue spots and 1/5 of the frogs have green spots. How many frogs do not have spots assuming that a frog cannot have both blue and green spots?	8 [frogs]
7	What is one-fifth of one-third of one-half of 240?	8
8	How many sides are on three pentagons and fifteen octagons?	135 [sides]
9	If Iggy's plane travels at 400 miles per hours, how many hours will it take her to travel the 5,600 miles from Los Angeles to Tokyo?	14 [hours]
10	How many sides are there on twelve pentagons and sixteen triangles	108 [sides]

COLLEGE KNOWLEDGE BOWL ROUND #3 – SET 3

#	Problem	Answer
1	If X plus twenty-one is sixteen, what is X?	-5
2	Bob the Builder can hammer 3 nails every 5 minutes. How many minutes will it take him to hammer 39 nails?	65 [min]
3	What is the product of the numerator and denominator of the fraction 24/96 when it is fully reduced?	4
4	A poster has dimensions of 4 feet by 7 feet. What is the area minus the perimeter?	6
5	Find the product of all the factors of 6.	36
6	If Ronald was born in 1953 and two years ago, it was 2016, how old is Ronald currently?	65 [years]
7	If I paid $21.57 for an item with a 50% discount, how much did the item cost originally?	[$] 43.14
8	How many ways can you rearrange the letters in the word CIRCLE?	360 [ways]
9	If Peggy has 6 quarters in her piggybank and it amounts to $2.18, what is the maximum number of nickels she can have?	13
10	The sum of 2000 consecutive integers is 1000. What is the sum of the digits of the *greatest* of these 2000 integers?	1

COLLEGE KNOWLEDGE BOWL ROUND #4 – SET 4

#	Problem	Answer
1	What is 40% of 70?	28
2	What is the number in the tens place of five hundred forty-two and seventy-three hundredth?	4
3	Sauron needs a ring. He can choose from a 70 dollar ring at 30 percent off, or a 200 dollar ring at 70 percent off. How much will he pay, assuming he buys the more expensive ring?	[$] 60
4	Nathan creates a series of numbers 2, 4, 8, 16, etc. What is the 11th term in this sequence?	2048
5	How many ways can I pick 2 people from a group of 4, assuming order *does* matter?	12
6	Andrew's dresser has 3 blue socks, 8 green socks, and 4 red socks. If he randomly pulls socks out of the drawer, how many socks must he grab before it is guaranteed he has a matching pair of socks?	4 [socks]
7	What is the first positive integer that isn't a multiple of 2, 3, or 5?	1
8	The surface area of a cube is 54 square inches. What is the length of each side of the cube?	3 [inches]
9	Mary got either a 90 or a 100 on each of her 5 math tests. The average of all her math tests is 98. How many 90s did she get?	1
10	How many numbers between 1 and 100 are equal to 5 times an odd number?	10

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COLLEGE KNOWLEDGE BOWL ROUND #5 – SET 5

#	Problem	Answer
1	What is the area of a rectangle with side lengths of 7 inches and 5 inches?	35 [inches]
2	What is the sum of the first 6 prime numbers?	41
3	"A" equals 2, "B" equals two times "A", and "C" equals 2 times "B". If this pattern were to continue alphabetically, what would be the sum of the letters D plus A plus B?	22
4	On April 6th, Vanessa tells her friend that she has an orchestra concert in 47 days. What is the date of her concert? (There are 30 days in April)	May 23rd
5	John has a deck of 52 standard playing cards. If he draws 2 cards, what's the probability that they are the same suite?	4/17
6	For what side length of a cube is the surface area the same as the volume?	6
7	Harrison scored a 42 on his first test, a 54 on his second test, and a 26 on his third test. What must he score on his fourth test to average 55 points on his 4 tests?	98
8	Two angles of a quadrilateral are 94 degrees and 24 degrees. What is the measure of one of the remaining angles if both of them are equal?	121 [degrees]
9	If 7 Bedorps are equal to 12 Bedoops, and 4 Bedoops are equal to 19 Bedawps, then how many Bedawps are equal to 21 Bedorps?	171
10	If Bob jumps 15 additional times, the total number of his jumps will be 3 times what it was 3 jumps ago. How many times has Bob jumped?	12

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COLLEGE KNOWLEDGE BOWL ROUND #6 – SET 6

#	Problem	Answer
1	90 is 25% of what number?	360
2	At 2 pm, Alejandro has 30 apples. Every 3 hours, a thief steals 7 of the apples. At 2 am, how many apples are left?	2 [apples]
3	Tyler buys a robot for 40 dollars plus 10 percent sales tax. If he pays with a 50 dollar bill, how much change, in dollars, will he get?	$6
4	Abby has a total of 4 different shirts, 3 different pants, and 3 different pairs of shoes. How many different outfits can she make?	36
5	Potatoes cool at a rate of 8 degrees per minute. If I take my potato out of the microwave at 170 degrees, how long, in minutes, will it take to cool the potato to 82 degrees?	11 [minutes]
6	Jessica has 4 lions, 9 chickens, and a number of monkeys. If there are a total of 40 legs on the farm, how many monkeys are there?	3
7	The ratio of boys to girls in a school is 5:4. If there are 270 students at the school, how many boys are there?	150
8	What is the sum of all positive counting numbers from 1 to 50?	1275
9	James and Ryan are playing a racing game. James' car travels at 3 miles per minute. Ryan's car travels at 2 miles per minute, but he has a 5 minute head start. How many minutes will it take James to catch Ryan?	10 [minutes]
10	What is the sum of the digits of 11 times 11 times 11 times 11?	16

COLLEGE KNOWLEDGE BOWL ROUND – EXTRA

#	Problem	Answer
1	Tyler has 79 cents worth of coins. If he only has 2 kinds of coins, then what is the least number of coins that Tyler can have?	7
2	3 consecutive integers have a sum of 96. What is the smallest of the 3 integers?	31
3	How many nonzero perfect squares are less than 57?	7
4	How many distinct ways can I rearrange the letters in the word "MATH"?	24
5	10 students in the room are wearing blue shirts. 16 students in the room are wearing long-sleeved shirts. If there are 6 students wearing blue, long-sleeved shirts, how many students are wearing long-sleeved shirts that are not blue?	10

Extra

"Math is Cool" Championships -- 2017-18

Student Name _____ Team #_____

School Name _____ Proctor Name_____Room #_____

5th Grade   <u>Mental Math</u> – 30 sec per question

8 problems read orally to everyone - Approximately 8% of Individual Score - 25% of team score

You may NOT be seated next to anyone from your school. If you are MOVE NOW to avoid being disqualified! 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/her pencil down, the maximum wait time is 30 seconds after completion of 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 will be asked the same eight questions. Individual scores used to determine individual placing will be determined by the sum of the Mental Math score and the Individual Test score for each individual. In addition, the top three Mental Math scores from one team will be totaled and doubled and will contribute to 25% of the team score.*

	Answer	**1 or 0**	**1 or 0**
1	270		
2	7		
3	28 [inches]		
4	42 [leaves]		
5	1/36		
6	45 [minutes]		
7	[$] 11		
8	Monday		

"Math is Cool" Championships – 2017-18
5th Grade – February 23, 2018

School Name_____ Team #_____

Proctor Name _____ Room #_____

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

*This test is the only test where you will be penalized for incorrect responses. You will receive 2 points for a correct letter response, 0 points for leaving it blank and -1 point for an incorrect response. 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	A		
2	D		
3	C		
4	B		
5	D		
6	C		
7	A		
8	B		
9	E		
10	D		

"Math is Cool" Championships – 2017-18
5th Grade – February 23, 2018

School Name_____Team #_____

Proctor Name_____Room #_____

Team Contest – Score Sheet – 15 minutes – 30% of team score

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

DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1	100 [sq. feet]		
2	73 [feet]		
3	132 [minutes]		
4	30 [cookies]		
5	32		
6	2 [hours]		
7	10 [chickens]		
8	48 [pieces of candy]		
9	60 [ways]		
10	23		

"Math is Cool" Championships -- 2017-18

5th Grade – February 23, 2018

KEY

PRACTICE RELAY

Answer for person # 1	Answer for person # 2	Answer for person # 3	Answer for person # 4
11	**33**	**35**	**8**
1 or 0	1 or 0	1 or 0	2 or 0

RELAY # 1

Answer for person # 1	Answer for person # 2	Answer for person # 3	Answer for person # 4
6	**360 [minutes]**	**20**	**4**
1 or 0	1 or 0	1 or 0	2 or 0

RELAY # 2

Answer for person # 1	Answer for person # 2	Answer for person # 3	Answer for person # 4
15	**60**	**20**	**42**
1 or 0	1 or 0	1 or 0	2 or 0

"Math is Cool" Championships -- 2017-18

Student Name _____   Team #_____

School Name _____ Proctor Name_____ Room #_____

5th Grade   <u>Mental Math</u> – 30 sec per question

8 problems read orally to everyone - Approximately 8% of Individual Score - 25% of team score
You may NOT be seated next to anyone from your school. If you are MOVE NOW to avoid being disqualified! 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/her pencil down, the maximum wait time is 30 seconds after completion of 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 will be asked the same eight questions. Individual scores used to determine individual placing will be determined by the sum of the Mental Math score and the Individual Test score for each individual. In addition, the top three Mental Math scores from one team will be totaled and doubled and will contribute to 25% of the team score.*

	Answer	**1 or 0**	**1 or 0**
1			
2			
3			
4			
5			
6			
7			
8			

"Math is Cool" Championships – 2017-18
5th Grade

School Name _____ Team # _____

Proctor Name _____ Room # _____

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

This test is the only test where you will be penalized for incorrect responses. You will receive 2 points for a correct letter response, 0 points for leaving it blank and -1 point for an incorrect response. 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			
2			
3			
4			
5			
6			
7			
8			
9			
10			

"Math is Cool" Championships – 2017-18
5th Grade

School Name_____Team #_____

Proctor Name_____Room #_____

Team Contest – Score Sheet – 15 minutes – 30% of team score

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

DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

"Math is Cool" Championships – 2017-18
February 23, 2018

STUDENT NAME: _____

Proctor Name: _____

School Name: _____

Team #: _____   Room #: _____

5th Grade Individual Contest – Score Sheet

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:			

5th Grade