

"Math Is Cool" Championships — 2019-20

4th Grade — February 28, 2020

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	What is the positive difference between 345 and 159?
2	Round 7926.1847 to the nearest hundredth.
3	How many sides does a nonagon have?
4	Find the next term in the arithmetic sequence: 2, 5, 8, ____.
5	What is the product of 24 and 5?
6	What number is halfway between 26 and 8?
7	Yadira is making scrambled eggs for her math team. If she bought 5 dozen eggs and used 37 of them, how many eggs does she have left?
8	What is the measure of an angle that is supplementary to an angle measuring 76 degrees?
9	Today is Friday. Andrea's birthday was two days ago. Her best friend's birthday is 25 days after Andrea's birthday. What day of the week will it be when it is her friend's birthday? Answer: Sunday=1, Monday=2, Tuesday=3, Wednesday=4, Thursday=5, Friday=6, Saturday=7.
10	Calculate: $7^2 + 50$
11	Leah makes mistakes twice during the span of 30 minutes while doing her math homework. If she continues making mistakes at the same rate, how many mistakes will Leah make during 4 hours of math homework?
12	An equilateral triangle has a side length of 9. What is its perimeter?
13	Calculate the product: 8 times $\frac{3}{4}$ times $\frac{1}{2}$.
14	Alan is playing Fortnite against Manuel. There are 98 other players in their Battle Royale match. As a decimal, what is the probability that either Alan or Manuel wins (assuming everyone has an equal chance of winning)?
15	Bryson wants to buy a new carpet for his bedroom. If the length of the room is 10 feet and the width is 13 feet, what is the area of the carpet he must buy?
16	What is the <u>numerator</u> when $5\frac{1}{6}$ is written as an improper fraction.

17	Hali starts playing with LEGOs at 10:40 AM. If she finishes playing with LEGOs at 1:38 PM, how many minutes did she spend playing with LEGOs?
18	Rosaline is a competitive swimmer. She has won 20 races and lost 5 races. What percent of all her races did Rosaline win?
19	When Carly is 4 years old, Will is 3 times her age. How old will Carly be when Will is 21?
20	A triangle has a base of 9 and a height of 15. What the area of the triangle, as a decimal to the nearest tenth?
21	Gannon has a favorite 3-digit number. The second digit is twice as big as the first digit. The third digit is three less than the second digit. What is the largest possible value for Gannon's favorite number?
22	The "Baby Shark" song has received 2,300,000,000 views on YouTube. If the owner of the video gets $\frac{1}{10}$ of a penny for each view, how much have they earned in dollars from YouTube views?
23	Tehya and her friend Miguel have a lot of pet cats. Miguel has twice as many cats as Tehya. All together their cats have 24 eyes. How many cats does Tehya have?
24	A rectangle measures 12 meters by 5 meters. What is its area in square centimeters?
25	Naomi is sharing a Hershey bar with her friends. She gives $\frac{1}{3}$ of it to her friend Rachel, then $\frac{1}{4}$ to her friend Tyler, and then $\frac{1}{12}$ to her friend Cameron. If a Hershey bar is evenly divided into 12 pieces, how many pieces of Hershey bar does Naomi have left?
26	Write the fraction $\frac{6}{8}$ as a percentage.
27	Kyleen can complete one math question every three minutes. If there are thirty-five questions on her math test, how many hours, as a decimal rounded to the nearest hundredth, does it take Kyleen to finish the test?
28	Little brown bats can eat half their body weight in insects every night. If a single bat weighs 8 grams, how much would it eat during the months of June, July, and August? (Assume the bat does not gain body weight during this time.)
29	How many different ways are there to arrange the letters in the word LION?
30	Find the area of the unshaded portion of the figure. <div data-bbox="1166 1598 1430 1877" data-label="Image"> </div>

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Challenge Questions: 3 points each

31	What is one-fourth of two-sixths of 18? Give your answer as a decimal.
32	I am making a cleaning solution with one-part of bleach to every fifteen parts of water. If I use $\frac{1}{3}$ cup of bleach, how many cups of water do I need?
33	AJ earns \$5 for every lawn he mows. If AJ can mow four lawns per day, how many weeks would it take him to save seven hundred dollars?
34	An obtuse isosceles triangle has a base angle of forty-three degrees. What is the positive difference between the other two angles?
35	What is the ones digit of 3^{15} ?
36	A farmer owns pigs and ducks. When counted, there are forty heads and one-hundred-sixteen legs. How many ducks are there?
37	A shirt that I want to buy costs \$17.50 after the price has been reduced by thirty percent. What was the original price of the shirt in dollars?
38	Justin wants to finish reading his book. He has read $\frac{1}{3}$ of his book already. He reads 25 pages every Monday, Wednesday, Thursday, and Saturday. Justin's book is 600 pages long. If today is Sunday, what day of the week will he finish reading the book? Answer: Sunday=1, Monday=2, Tuesday=3, Wednesday=4, Thursday=5, Friday=6, Saturday=7.
39	At MathCity Intermediate School, exactly half of their students participate in one or more extra-curricular activities. In total, 60 students are on the robotics team, 80 students participate in Math Is Cool (MIC), and 100 students are in the school band. Of those students, 10 students participate in only robotics and MIC, 15 students participate in only MIC and band, 12 students participate in only robotics and band, and 30 students participate in all three activities. How many total students attend MathCity Elementary?
40	What is the sum of: $100 - 1 + 99 - 2 + 98 - 3 + \dots + 51 - 50$