Answers

1. $2018 + 2019 = 20 + 18 + 20 + 19 + \underline{\ ?\ }$

   A) 0   B) 2000   C) 3960   D) 4000

   1.

2. If 1/3 of my hats are red, and 36 are not red, I have $\underline{\ ?\ }$ hats.

   A) 18   B) 54   C) 72   D) 108

   2.

3. The sum of the measures of the 2 smallest angles of a triangle *could be*

   A) 151 degrees B) 135 degrees C) 121 degrees D) 61 degrees

   3.

4. $2018 = 20 \times \underline{\ ?\ } + 18 \times 1$

   A) 1   B) 10   C) 18   D) 100

   4.

5. Every English letter appears in my 2018-letter password at least once. The letter A appears *at most* $\underline{\ ?\ }$ times.

   A) 77   B) 78   C) 1992   D) 1993

   5.

6. Which of the following is the product of 2 consecutive integers?

   A) 182   B) 195   C) 208   D) 221

   6.

7. The least integer with a prime number of different prime factors is

   A) 6   B) 8   C) 12   D) 15

   7.

8. I have 5 coins consisting of pennies, nickels, and dimes. If I have at least 1 of each type of coin, the least possible value of my 5 coins is

   A) 5¢   B) 15¢   C) 16¢   D) 18¢

   8.

9. Exactly $\underline{\ ?\ }$ different 3-digit area codes can be made using only 2s and 3s, with at least one 2 and one 3 in each area code.

   A) 4   B) 6   C) 9   D) 12

   9.

10. How many multiples of 10 are factors of 10^2?

    A) 1   B) 2   C) 3   D) 4

    10.

11. My team had to win a certain number of games to make it to the finals, and we won every 6th game we played. If my team qualified for the finals after our 96th game, how many wins did we need?

    A) 12   B) 16   C) 18   D) 90

    11.

12. What is the greatest common factor of 1×3×5×7×9 and 2×4×6×8×10?

    A) 1   B) 3   C) 5   D) 15

    12.

13. The expression 2^{400} is the product of exactly $\underline{\ ?\ }$ sixteens.
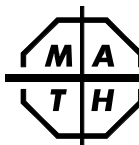
    A) 25   B) 50   C) 100   D) 200

    13.

14. The 2nd act of a 3-act play is 1/3 the length of the entire play. If the 1st act is twice as long as the 3rd, what fraction of the play is the 3rd act?

    A) 1/9   B) 2/9   C) 3/9   D) 4/9

    14.

15. If I double my speed of 12 000 m/hr., my new speed will be

    A) 200 m/min.   B) 400 m/min.   C) 600 m/min.   D) 2400 m/min.

    15.

16. Which of the following could be the perimeter of an equilateral triangle with integral side-lengths?

    A) 2017   B) 2018   C) 2019   D) 2020

    16.

17. The greatest of 10 consecutive positive integers is a prime number. What is the least possible sum of these integers?

    A) 65   B) 77   C) 127   D) 129

    17.

18. One-fourth of Ed's balloons popped, with 2 balloons popping every 3 minutes for an hour. How many balloons did not pop?

    A) 40   B) 80   C) 120   D) 160

    18.

19. What is the greatest common factor of 6^8 and 8^6?

    A) 2^2 B) 4^4 C) 6^6 D) 8^8

    19.

20. The expression 100^{2018} can be written as the product of exactly $\underline{\ ?\ }$ prime numbers.

    A) 5×2018 B) 4×2018 C) 2×2018 D) 2018

    20.

21. How many integers have a square root greater than 15 and less than 16?

    A) 0   B) 1   C) 29   D) 30

    21.

22. $\sqrt{9} + \sqrt{81} = \sqrt{9 + 81 + \underline{\ ?\ }}$

    A) 0   B) 54   C) 90   D) 144

    22.

23. Each day for a month, Sully wakes up 5 minutes earlier than he did the day before. If Sully woke up at 6:50 a.m. on a Monday, on what day did he wake up at 6:20 a.m.?

    A) Sunday   B) Monday   C) Tuesday   D) Wednesday

    23.

24. The product of all factors of 21 equals $21 \times \underline{\ ?\ }$.

    A) 1   B) 2   C) 3   D) 21

    24.

25. $(1234 + 0 + 1234 + 1 + 1234 + 2 + 1234 + 3 + 1234 + 4) \div 5 =$

    A) 1234   B) 1234 + 1   C) 1234 + 2   D) 1234 + 3

    25.
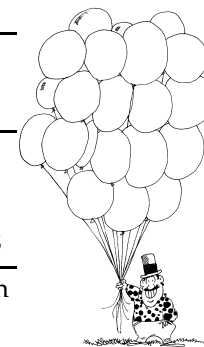
26. On a number line, two different integers are each the same distance from my favorite integer and have a sum of 144. What is my favorite integer?

    A) 31   B) 36   C) 48   D) 72

    26.

27. Last year I spent $180 for 80 pairs of shades. This year I spent $180 for 5 fewer pairs of the same shades. How much did the price per pair increase since I bought them last year?

    A) 15¢   B) 72¢   C) 96¢   D) 120¢

    27.

28. I drove at a constant speed of 60 km/hr. without stopping. At exactly 5:00 p.m. I had traveled 318 km. At what time did I start driving?

    A) 10:42 a.m.   B) 11:42 a.m.   C) 12:42 p.m.   D) 1:42 p.m.

    28.

29. I added 3 of the numbers 11111, 22222, 33333, 44444, 55555, 66666, 77777, 88888, and 99999. My sum was one of these 9 numbers. When my sum was divided by 11, the remainder **could not** have been

    A) 5   B) 6   C) 7   D) 8

    29.

30. I wrote the 101 integers from 1 to 101 in order on paper. If I wrote 101 digits per line, what was the sum of the last 4 digits on the first line?

    A) 11   B) 17   C) 19   D) 21

    30.

31. The product of all the factors of an integer greater than 1 equals the cube of that integer. What is the least integer for which this is true?

    A) 24   B) 18   C) 12   D) 8

    31.

32. On our last history test, at least one student scored each of the grades A, B, C, D, and F. If 8 got an A, 15 got a C or higher, 10 got a B or lower, and only one student got a D, how many students got an F?

    A) 1   B) 2   C) 3   D) 5

    32.

33. $(2^2 \times 2^4 \times 2^6 \times \ldots \times 2^{98} \times 2^{100}) \div (2^1 \times 2^3 \times 2^5 \times \ldots \times 2^{97} \times 2^{99}) =$

    A) 2   B) 2^{49} C) 2^{50} D) 2^{100}

    33.

34. Starting at 1:00 p.m., a ball was rolled in each of two lanes. A ball was rolled once every 15 seconds in one lane and once every 18 seconds in the other. By 1:44 p.m., how many times had balls been rolled at the same time in both lanes?

    A) 29   B) 30   C) 40   D) 44

    34.

35. I counted backwards out loud from 2018 by ones. When I said my 50th multiple of 8, how many numbers had I counted?

    A) 252   B) 395   C) 400   D) 1618

    35.

The end of the contest ✍ 6

M·A·T·H

SIXTH GRADE MATHEMATICS CONTEST

Math League Press, P.O. Box 17, Tenafly, New Jersey 07670-0017

Sample 6th Grade Contest

Tuesday, February 19 (alternate date: February 26), 2019

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Instructions

- **Time** Do *not* open this booklet until told by your teacher to begin. You might be *unable* to finish all 35 questions in the 30 minutes allowed.

- **Scores** Remember that *this is a contest, not a test*—there is no "passing" or "failing" score. Few students score 28 points (80% correct). Students with half that, 14 points, *should be commended!* High-scoring students may be invited to our "Math Camp" in July.

- **Results Posted Online** High-scoring contest results, both overall and regional, will be posted at *www.mathleague.com* no later than April 15.

- **Format, Point Value, & Eligibility** Every answer is an A, B, C, or D. Write answers in the *Answers* column. A correct answer is worth 1 point. Unanswered questions get no credit. You **may** use a calculator. You're eligible for this contest only if you are in grade 6 or below and only if you don't also take this year's Annual 7th or Annual 8th Grade Contest.

Please Print (*To the student: You must complete all items below*)

Last Name _____ First Name _____

School _____ Teacher _____ Grade Level _____

Time at Start of Contest _____ Today's Date _____

Do Not Write In The Space Below

To the Teacher:
Please enter the score at the right before you return this paper to the student. *Papers with scores of 30 or higher must be held until June 1.*   **Student's Score**: _____