

There is no Do Now today. Please prepare to grade your homework. Please read the details on the front of last year's FML contest while you wait for class to begin. Thank you!



FLORIDA MATHEMATICS LEAGUE

P.O. Box 140507, Gainesville, Florida 32614-0507

2017-2018 Annual 6th Grade Contest

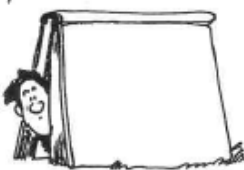
Tuesday, February 20 (alternate date: February 27), 2018

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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.

1. $6 \times 60 \times 600 = 3 \times 30 \times 300 \times \underline{\quad}$
A) 2 B) 3 C) 6 D) 8
2. Jan rode twice as far as Dan, who rode half as far as Stan. Stan rode 50 km. How far did Jan ride?
A) 50 km B) 75 km C) 100 km D) 200 km
3. The least common multiple of 3 and 9 is
A) 3 B) 9 C) 18 D) 27
4. The product 4×3 can be written as the sum
A) $3+3+3$ B) $4+3+4+3$ C) $3+3+3+3$ D) $4+4+4+4$
5. $1234 = 1 \times 1000 + \underline{\quad} + 4 \times 1$
A) 23×1 B) 23×10 C) 23×100 D) 230×10
6. How many angles of an isosceles right triangle are acute angles?
A) 3 B) 2 C) 1 D) 0
7. The smallest possible sum of two different prime numbers is
A) 3 B) 4 C) 5 D) 6
8. The greatest common factor of two numbers is 3. The product of these two numbers *must* be divisible by
A) 6 B) 9 C) 12 D) 18
9. The sum of 5 consecutive one-digit integers is *at most*
A) 15 B) 25 C) 35 D) 45
10. How many two-digit multiples of 10 are also multiples of 12?
A) 4 B) 3 C) 2 D) 1
11. I have read exactly $\frac{1}{3}$ of the total number of chapters in my 120-page book. If each chapter has the same whole number of pages, then the total number of chapters I have *left* could be
A) 16 B) 24 C) 32 D) 50
12. What is the greatest odd factor of $4^4 \times 5^5 \times 6^6$?
A) 3^6 B) 5^5 C) $3^5 \times 5^5$ D) $3^6 \times 5^5$
13. What is the sum of the factors of the prime number 2017?
A) 2016 B) 2017 C) 2018 D) 2019



1. 14. Lynn ran in 6 times as many races as the number of races she won. How many of her 126 races did Lynn *not* win?
A) 21 B) 90 C) 96 D) 105
2. 15. The least common multiple of 8 and 12 is the greatest common factor of 120 and
A) 80 B) 124 C) 144 D) 180
3. 16. January has the greatest possible number of Saturdays when January 1 occurs on any of the following days of the week *except*
A) Thursday B) Friday C) Saturday D) Sunday
4. 17. The number that is 10% of 1000 is 10 more than 10% of
A) 90 B) 100 C) 900 D) 990
5. 18. The sum of 16 fours has the same value as the product of $\underline{\quad}$ fours.
A) 2 B) 3 C) 4 D) 16
6. 19. Of the following, which is the sum of two consecutive integers?
A) 111 111 B) 222 222 C) 444 444 D) 888 888
7. 20. Abe drove for 2 hours at 30 km/hr. and for 3 hours at 50 km/hr. What was Abe's average speed over the 5 hours?
A) 35 km/hr. B) 40 km/hr. C) 42 km/hr. D) 45 km/hr.
8. 21. My broken watch runs twice as fast as it should. If my watch first broke at 6:15 P.M., what time was displayed on my watch 65 minutes later?
A) 7:20 P.M. B) 7:25 P.M. C) 8:20 P.M. D) 8:25 P.M.
9. 22. $(2018 \times 2017) + (2018 \times 1) =$
A) 2017^2 B) 2018^2
C) 2018^3 D) $(2018 + 2017)^2$
10. 23. A prized bird lays 2, 3, or 4 eggs each day. If the bird laid 17 eggs in 1 week, on *at most* how many days that week did the bird lay exactly 2 eggs?
A) 2 B) 3 C) 4 D) 5
11. 24. Of the following, which could be the perimeter of a rectangle whose side-lengths, in cm, are prime numbers?
A) 10 cm B) 22 cm C) 34 cm D) 58 cm
12. 25. The average of all possible total values of a 4-coin stack of nickels and dimes (containing *at least one* of each coin) is
A) 20¢ B) 30¢ C) 40¢ D) 60¢



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| 26. The diameter of Ann's drum is 40 cm more than the radius. What is half the circumference of the drum?
A) 120π cm B) 80π cm C) 60π cm D) 40π cm | 26. |
| 27. Of the following, which expression has the greatest number of factors that are multiples of 2018?
A) 2018×12 B) 2018^2 C) 2019^2 D) 2019^{2019} | 27. |
| 28. When the sum of the factors of a prime number is divided by that prime number, the remainder is
A) 0 B) 1 C) 2 D) 3 | 28. |
| 29. What is the sum of the digits of the greatest integer that has a square root less than 100?
A) 18 B) 36 C) 99 D) 100 | 29. |
| 30. My favorite number has 6 different factors. If the product of all 6 factors is 12^3 , what is the sum of the factors of my favorite number?
A) 24 B) 28 C) 32 D) 36 | 30. |
| 31. For how many different pairs of unequal positive integers less than 10 is the least common multiple of the numbers less than their product?
A) 6 B) 7 C) 8 D) 9 | 31. |
| 32. Exactly $\frac{1}{2}$ of the students in my class have at least one brother, and $\frac{1}{2}$ have at least one sister. If $\frac{1}{3}$ have no siblings, what fraction of the students in my class have at least one brother <i>and</i> at least one sister?
A) $\frac{1}{6}$ B) $\frac{1}{5}$ C) $\frac{1}{4}$ D) $\frac{1}{3}$ | 32. |
| 33. Each day, Sal swims a lap 1 second faster than on the day before. If Sal swims a lap in 60 minutes on the 1st day, on what day does he swim a lap in 10% less time than the 1st day?
A) 359th B) 360th C) 361st D) 362nd | 33. |
| 34. $2017^{2018} \times 2017^{2019} = 2017^{\frac{?}{?}} \times 2017^{1009}$
A) 1010 B) 2010 C) 3028 D) 4038 | 34. |
| 35. For every \$5 I earn from my job, I save \$2. For every \$4 I save from my job, I am given an additional \$1 from my parents to add to my savings. How much must I earn in order to have \$40 in savings?
A) \$160 B) \$120 C) \$100 D) \$80 | 35. |

