Levels 3 & 4 **MathGenius National Contest March 2018** **Critical Thinking Math**

1. 8 x 12 = 16 x __ .

A. 2
B. 3
C. 6
D. 9
E. 96

2. What is the difference between the sum of the first 2018 even counting numbers and the sum of the first 2018 odd counting numbers?

A. 0
B. 1
C. 2
D. 1009
E. 2018

3. How many seconds are there in 2 hours?

A. 120
B. 200
C. 1200
D. 3600
E. 7200

4. One angle of an isosceles triangle has a measure of 94^0. Another angle in this triangle must have a measure of _____.

A. 94^0
B. 86^0
C. 60^0
D. 43^0
E. 34^0

5. At Mathus Middle school, 24 students are enrolled in a Math class and 19 students are enrolled in an English class. If 7 students are enrolled in both Math and English classes, how many students are enrolled in exactly one of the Math or English classes?

A. 43
B. 36
C. 31
D. 29
E. 26

6. Ally, Betty, Cathy, Dory and Eddy are measuring the length of a rug by their steps. Ally needed 23 steps to walk its length, Betty needed 26 steps, Cathy needed 22 steps, Dory needed 21 steps and Eddy needed 28 steps. Whose steps were the longest?

A. Ally
B. Betty
C. Cathy
D. Dory
E. Eddy

7. Kate got 3 large pizzas for her Spring party. Her mom cut each pizza into 3 equal pieces. She then cut each piece into 3 equal pieces. Kate and each of her friends ate 2 pieces of pizza each. After the party, 3 pieces of pizza were left over. How many of Kate's friends attended her Spring party?

A. 12
B. 11
C. 9
D. 8
E. 7

8. Eric forms 2 three-digit numbers using the digits 3, 4, 5, 6, 7, 8. He uses each digit only once. Then, he adds these 2 numbers. What is the largest possible sum that Eric can get?

A. 825

B. 1257
C. 1599
D. 1617
E. 1716

9. Elsa has 5 sisters and 4 brothers. Her brother Elon has *B* brothers and *S* sisters. What is the product of *B* and *S* (that is, *S* times *B*)?

A. 20
B. 24
C. 18
D. 15
E. 12

10. Brandi and Courtney live in a multi-storied apartment complex. Brandi lives 16 floors above Courtney. One day, Brandi went to visit Courtney in her apartment by walking down the staircase. Half-way down, she was on 13th floor. On what floor does Brandi live?

A. 5
B. 13
C. 16
D. 20
E. 21

11. Maggie has 3 times as many beads as bracelets. She has a total of 36 beads and bracelets. How many beads does Maggie have?

A. 9
B. 12
C. 24
D. 27
E. 30

12. In a school of 452 students, every student goes to music class, art class or both. 297 students go to music class and 254 students go to art class. How many students who go to art class do not go to music class?

A. 99
B. 155
C. 198
D. 211
E. 551

13. The measures of the angles of a triangle are three consecutive whole numbers. The triangle must be _____.

A. Equilateral
B. Isosceles
C. Right
D. Obtuse
E. Scalene

14. What is the smallest natural number (1,2,3…) that is divisible by each of the first six natural numbers?

A. 60
B. 30
C. 20
D. 15
E. 120

15. The sum of three consecutive numbers is 105. What is the largest of the three numbers?

A. 36
B. 35
C. 34
D. 44
E. 45

16. What is the average of the first 199 whole numbers?

A. 50
B. 99
C. 100
D. 101
E. 199

17. If the pattern of MATHUSMATHUSMATHUS… is continued, what will be the 2018th letter?

A. M
B. A
C. T
D. H
E. S

18. A chicken, duck and turkey together weigh 15 pounds. A chicken and three ducks together weigh 23 pounds. A turkey and two ducks together weigh 1 pound more than a chicken, duck and turkey together. What is the weight of a turkey?

A. 3
B. 4
C. 5
D. 6
E. 7

19. In a chess tournament, the winner of a game gets 5 points while the loser gets 0 points. If the game is tied, each player gets 2 points. Joe played 18 games and got 61 points. What is the fewest number of games Joe could have lost?

A. 4
B. 3
C. 2
D. 1
E. 0

20. What is the minimum number of numbers must be selected from the first 25 natural numbers (1, 2, 3…25) to guarantee that there must have at least two numbers with the sum of 26 in the selction?

A. 14
B. 13
C. 12
D. 15
E. 11