

1. Which of the below values is equal to $(9 + 6)^2 - 9^2 - 6^2$

- A. 0
- B. 108
- C. 210
- D. 117
- E. 225

2. $8 \times 8 \times 8 \times 8 = 4 \times 4 \times 4 \times 4 \times \underline{\quad ?}$

- A. 2
- B. 4
- C. 8
- D. 16
- E. 32

3. An elevator can hold the weight of 12 adults or 20 children. How many children could ride on the elevator with 9 adults?

- A. 3
- B. 4
- C. 5
- D. 6
- E. 8

4. Ansley imagined a whole number. She increased it by 30%. Then she decreased it by 30%. What will be the change in Ansley's number?
- A. No change
 - B. 3% increase
 - C. 3% decrease
 - D. 9% increase
 - E. 9% decrease
5. The sum of four consecutive whole numbers is 150. What is the sum of the smallest and the greatest of these four numbers?
- A. 73
 - B. 75
 - C. 76
 - D. 77
 - E. 78
6. The product of three integers is 120. What is the smallest possible value for the sum of these three positive integers?
- A. 18
 - B. 17
 - C. 16
 - D. 15
 - E. 14

7. Samantha got distracted in her Math class. She wrote her name over and over again on one page of her note book. She completed 2173 letters before her teacher snatched away her notebook and asked her to pay attention in the class. What was the last letter that Samantha wrote?

- A. N
- B. A
- C. M
- D. T
- E. S

8. Juan's doctor gave him 32 pills and told him to take one pill every half hour. How many minutes will pass between the time Juan takes the first and the last pills?

- A. 960
- B. 990
- C. 900
- D. 930
- E. 1020

9. The sum of two prime numbers is 61. What is their product?

- A. 371
- B. 60
- C. 171
- D. 888
- E. 118

10. In the Laguna family, each of the brothers have same number of brothers and sisters. But, the sisters have 50% more brothers than sisters. What is the total number of siblings in the family?

- A. 11
- B. 10
- C. 9
- D. 8
- E. 7

11. The sum of two positive integers is 117. When the first number is multiplied by 10 and the second number is multiplied by 8, the products have same value. What is the smaller of the two numbers?

- A. 39
- B. 42
- C. 52
- D. 62
- E. 65

12. Joey rotated a regular pentagon clockwise about its center. What is the least number of degrees by which Joey must rotate it, so it coincides with the original position?

- A. 120
- B. 108
- C. 60
- D. 180
- E. 72

13. A video tape runs for 24 minutes. It takes 1 minute to rewind the tape before it can be run again. How many times can this video tape be shown in 3.5 hrs?

A. $8\frac{2}{5}$

B. $8\frac{5}{12}$

C. $8\frac{3}{8}$

D. $8\frac{1}{2}$

E. $8\frac{2}{3}$

14. How many whole numbers less than 100 can be written as a product of two or more consecutive whole numbers?

A. 10

B. 11

C. 12

D. 13

E. 14

15. In a list of six numbers, the mode is twice the mean. If the numbers are 27, 34, 39, 41, x , x , what is the value of x ?

A. 153

B. 141

C. 93

D. 74

E. 47

16. Salma arranged some beads in a square formation, with x rows and x columns. She then added one more row and one more column to make it a bigger square. She realized that she added 27 additional beads. How many beads were in Salma's original square formation?
- A. 81
B. 121
C. 169
D. 225
E. 289
17. A rectangular piece of wood is cut into 6 pieces perpendicular to its length. Every time it is cut, the blade removed one-tenth inch of wood which is lost as sawdust. If the length of each piece is 9.25", what was the length of the original piece of wood?
- A. 56"
B. 55.5"
C. 56.1"
D. 55.9"
E. 56.2"
18. During the month of July, Stefanie averaged 69 laps a day in her swimming practice. If she did one more lap each day than the previous day, how many laps did Stefanie swim on July 1st?
- A. 53
B. 54
C. 55
D. 59
E. 68

19. Each letter a , b , and c in the addition problem below stand for a different non-zero digit. What is the value of $a+b+c$?

$$\begin{array}{r} a a \\ b b \\ + c c \\ \hline b a c \end{array}$$

- A. 12
- B. 15
- C. 18
- D. 21
- E. 24

20. Kate has a rectangular picture, whose length is twice the width. She made a frame that is 1 inch wide all the way along this picture. If the perimeter of the picture (excluding the frame) is 96 inches, what is the area of the frame, in square inches?

- A. 100
- B. 200
- C. 412
- D. 512
- E. 612

For any questions, please reach us at support@mathusacademy.com or 2098-MATHUS (209.862.8487)