

June 24, 2023

Math Exercise

1. What is the value of $4 \cdot (-1 + 2 - 3 + 4 - 5 + 6 - 7 + \cdots + 1000)$?

- (A) -10 (B) 0 (C) 1 (D) 500 (E) 2000

2. How many digits are in the product $4^5 \cdot 5^{10}$?

- (A) 8 (B) 9 (C) 10 (D) 11 (E) 12

3. Let w, x, y , and z be whole numbers. If $2^w \cdot 3^x \cdot 5^y \cdot 7^z = 588$, then what does $2w + 3x + 5y + 7z$ equal?

- (A) 21 (B) 25 (C) 27 (D) 35 (E) 56

4. What is the sum of the prime factors of 2010?

- (A) 67 (B) 75 (C) 77 (D) 201 (E) 210

5. The letters A, B, C and D represent digits. If $\begin{array}{r} A B \\ + C A \\ \hline D A \end{array}$ and $\begin{array}{r} A B \\ - C A \\ \hline A \end{array}$, what digit does D represent?

- (A) 5 (B) 6 (C) 7 (D) 8 (E) 9

6. For any positive integer n , \boxed{n} to be the sum of the positive factors of n . For example,

$$\boxed{6} = 1 + 2 + 3 + 6 = 12. \text{ Find } \boxed{\boxed{11}}.$$

- (A) 13 (B) 20 (C) 24 (D) 28 (E) 30