

1. What is $3 \times 4 + 5 \times 6$?
2. If $a\#b$ is defined as $a \cdot b \cdot (a - b)$, what is $7\#(3\#2)$?
3. Compute $(2 - 1)^4 + (3 - 2)^4 + \cdots + (2021 - 2020)^4$.
4. Which of the following expressions is closest in value to $\frac{5}{2}$: 3.7, 2, or $\frac{37}{19}$?
5. Positive integers a and b satisfy $a^2 - b^2 = 17$. What is $a + b$?
6. What is the sum of the factors of 48?
7. Triangle ABC has $AB = 10$, $AC = 24$, and $BC = 26$. If M is the midpoint of BC , what is the length of AM ?
8. How many ways are there to arrange the letters in PILGRIM?