

Fibonacci Numbers: Notation

Problem: Evaluate $3F_{2 \times 5} + F_6^2$ where F_N is the N^{th} Fibonacci Number.

Solution: Recall that the Fibonacci Sequence is

1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, ...

↑
 F_6

↑
 F_{10}

We compute:

$$3F_{2 \times 5} + F_6^2 = 3F_{10} + F_6^2 \quad (\text{since } 2 \times 5 = 10)$$

$$= 3(55) + (8)^2 \quad (\text{since } F_{10} = 55 \text{ and } F_6 = 8.)$$

$$= 165 + 64$$

$$= 229. \quad \blacksquare$$