Concepts Weird Fibonacci Problem

Recall Fibonacci Numbers:

$$F_n = \begin{cases} 0 & \text{if } n = 0; \\ 1 & \text{if } n = 1; \\ F_{n-1} + F_{n-2} & \text{if } n > 1. \end{cases}$$

| n | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------------|-----|-----|---|---|-----|-------|-----|-------|
| \boldsymbol{F}_n | 0 | 1 | 1 | 2 | 3 | 5 | 8 | 13 |
| Ratio with | N/A | N/A | 1 | 2 | 1.5 | 1.667 | 1.6 | 1.625 |
| Previous Term | | | | | | | | |

Suppose that you know that $F_{n+1} \ge (1.6)F_n$ for *n* bigger than or equal to 4.

Prove that, $F_{n+1} \leq 1.7(F_n)$ for *n* bigger than or equal to 3.