

Fibonacci Numbers

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$$[F(n) = F(n-1) + F(n-2)] \rightarrow$$

Rec $0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89$ \rightarrow (89)

0^{th} 1^{st}

$$2^{nd} \rightarrow 1 + 0$$

$$4^{th} \rightarrow 2 + 1$$

$$6^{th} \rightarrow 5 + 3$$

$$3^{rd} \rightarrow 1 + 1$$

$$5^{th} \rightarrow 3 + 2$$

$$7^{th} \rightarrow 8 + 5$$

8^{th}
 9^{th}

find 10^{th} fibonacci number.

10^{th}

$$\begin{aligned}
 F(10) &= F(9) + F(8) \\
 &\swarrow \quad \searrow \\
 F(8) + F(7) &\quad F(7) + F(6) \\
 \swarrow \quad \searrow \quad \swarrow \quad \searrow &\quad \swarrow \quad \searrow \quad \swarrow \quad \searrow \\
 F(7) + F(6) \quad F(6) + F(5) &\quad F(6) + F(5) \quad F(5) + F(4)
 \end{aligned}$$