The 3x + 1 problem.

The Problem.

If n is odd, multiply by three and add one. If n is even, divide by two. What happens?

I try a couple cases.

$$5 \rightarrow 16 \rightarrow 8 \rightarrow 4 \rightarrow 2 \rightarrow 1 \rightarrow 4 \rightarrow 2 \rightarrow 1 \rightarrow \cdots$$

$$7 \rightarrow 22 \rightarrow 11 \rightarrow 34 \rightarrow 17 \rightarrow 52 \rightarrow 26 \rightarrow 13 \rightarrow 40 \rightarrow 20 \rightarrow 10 \rightarrow 5 \rightarrow ?$$

You try a few cases.

$$9 \rightarrow$$

$$13 \rightarrow$$

$$24 \rightarrow$$

$$25 \rightarrow$$

$$19 \rightarrow$$

$$128 \rightarrow$$

In general?

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