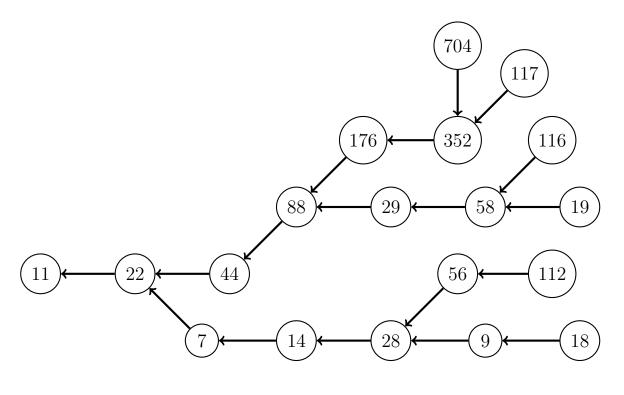
## Not Yet Ready: Solution

Notice the progression  $22 \leftarrow 44 \leftarrow 88$ . It suggests a process of simply dividing by 2. Indeed, this explains what happens to even numbers on the graph.

The arrows from odd numbers are  $352 \leftarrow 117$ ,  $88 \leftarrow 29$ ,  $28 \leftarrow 9$ ,  $22 \leftarrow 7$ ; in these cases, the ratio between neighboring numbers is closer to 3 than it is to 2. Suspiciously close, in fact. Indeed, the larger numbers are exactly 1 greater than the smaller odd numbers in these cases! So we have:



Our graph is none other than a graph of the function

$$T(x) = \begin{cases} x/2 & x \text{ even} \\ 3x+1 & x \text{ odd} \end{cases}$$

The **Collatz conjecture** proposed in 1937 says this function applied over and over again to any whole number seed must eventually reach 1. Paul Erdös, one of the most prolific and renowned mathematicians of the 20th century, said of the conjecture "Mathematics may not be ready for such problems."