

Rules of the game:

- ① The winner is the player who takes the last counter.
- ② The 1st player must take from 1 to all but one of the counters.
- ③ Then players alternate taking counters, with the rule that you must take at least 1, but no more than twice what your opponent took on their previous turn.

$ \begin{array}{r} 29 = 21 + 8 + 1 \\ - 3 \text{ B} \\ \hline 26 = 21 + 5 \\ - 5 \text{ F} \\ \hline 21 \\ - 8 \text{ B} \\ \hline 13 \end{array} $ <p style="color: red; font-size: small;">Fraud in. should have picked up the 13</p>	$ \begin{array}{r} 13 \text{ slow down} \\ - 1 \text{ F} \\ \hline 12 = 8 + 3 + 1 \\ - 2 \text{ B} \\ \hline 10 = 8 + 2 \\ - 2 \text{ F} \\ \hline 8 \end{array} $	$ \begin{array}{r} 8 \\ - 1 \text{ B} \\ \hline 7 = 5 + 2 \\ - 2 \text{ F} \\ \hline 5 \\ - 1 \text{ B} \\ \hline 4 \end{array} $	$ \begin{array}{r} 4 = 3 + 1 \\ - 1 \text{ F} \\ \hline 3 \\ - 1 \text{ B} \\ \hline \boxed{2} \text{ F} \end{array} $
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If it's two counters

$$\begin{array}{r} -1 \quad F \\ \hline \boxed{1} \quad B \end{array}$$

Go second

If we start with 3 counters

$$\begin{array}{r} -1 \quad F \\ \hline \boxed{2} \quad B \end{array}$$

Go second

$$\begin{array}{r} 4 = 3+1 \\ -1 \quad B \\ \hline 3 \\ -1 \quad F \\ \hline \boxed{2} \quad B \\ \text{Go first.} \end{array}$$

$$\begin{array}{r} Y \\ -1 \\ \hline 33 = 21+12 \\ = 21+8+4 \\ = 21+8+3+\boxed{1} \end{array}$$

$$\begin{array}{r} F \\ -1 \\ \hline 32 \\ 31 = 21+10 \\ = 21+8+\boxed{2} \end{array}$$

$$\begin{array}{r} Y \\ -2 \\ \hline 29 \end{array}$$

$$\begin{array}{r} F \\ -1 \\ \hline 28 = 21+7 \\ = 21+5+\boxed{2} \end{array}$$

$$\begin{array}{r} Y \\ -2 \\ \hline 26 \end{array}$$

$$\begin{array}{r} F \\ -1 \\ \hline 26 \\ 25 = 21+4 \\ = 21+3+1 \end{array}$$

$$\begin{array}{r} Y \\ -1 \\ \hline 24 \end{array}$$

$$\begin{array}{r} F \\ -1 \\ \hline 23 = 21+2 \end{array}$$

$$\begin{array}{r} Y \\ -2 \\ \hline 21 \end{array}$$

$$\begin{array}{r} F \\ -1 \\ \hline 20 = 13+7 \\ = 13+5+\boxed{2} \end{array}$$

$$\begin{array}{r} Y \\ -2 \\ \hline 18 \end{array}$$

$$\begin{array}{r} F \\ -1 \\ \hline 17 \end{array}$$

$$\begin{array}{r} Y \\ -1 \\ \hline 17 = 13+4 \\ = 13+3+1 \\ 16 \end{array}$$

$$\begin{array}{r} F \\ -1 \\ \hline 15 = 13+2 \end{array}$$

$$\begin{array}{r} Y \\ -2 \\ \hline 13 \end{array}$$

$$\begin{array}{r} F \\ -1 \\ \hline 12 = 8+4 \\ = 8+3+1 \end{array}$$

$$\begin{array}{r} Y \\ -1 \\ \hline 11 \end{array}$$

$$\begin{array}{r} F \\ -1 \\ \hline 10 \end{array}$$

$$10 = 8 + 2$$
$$y = \frac{2}{8}$$

$$R = \frac{1}{7} = 5 + 2$$

$$y = \frac{2}{5}$$

$$F = \frac{1}{4}$$

$$4 = 3 + 1$$
$$y = \frac{1}{3}$$

$$F = \frac{1}{3}$$

$$\boxed{12} \quad y$$

