```
Fr = {17/91, 78/85, 19/51, 23/38, 29/33, 77/29,
    95/23, 77/19, 1/17, 11/13, 13/11, 15/2, 1/7, 55/1}
Length[
    Fr];
```

Out[170]= $\left\{ \frac{17}{91}, \frac{78}{85}, \frac{19}{51}, \frac{23}{38}, \frac{29}{33}, \frac{77}{29}, \frac{95}{23}, \frac{77}{19}, \frac{1}{17}, \frac{11}{13}, \frac{13}{11}, \frac{15}{2}, \frac{1}{7}, 55 \right\}$

```
f[n_] :=
  If[(k = LengthWhile[Fr, Not[IntegerQ[n * #]] &]) == Length[Fr], -1, n * Fr[[k + 1]]]
For[i = 0; n = 4, i ≤ 100 000 && n ≠ -1, n = f[n]; i++,
  If[n == 2^(IntegerLength[n, 2] - 1),
    Print["i = ", i, "  log2 n = ", IntegerLength[n, 2] - 1]]
]
```

```
i = 0   log2 n = 2

i = 50   log2 n = 3

i = 262   log2 n = 5

i = 691   log2 n = 7

i = 2356   log2 n = 11

i = 3874   log2 n = 13

i = 8083   log2 n = 17

i = 11 342   log2 n = 19

i = 19 249   log2 n = 23

i = 36 962   log2 n = 29

i = 45 661   log2 n = 31

i = 75 398   log2 n = 37
```