n [1 2 3 4 5 6 7 8 9 10 11 12]

$f(n)\left[\frac{2}{1}, \frac{-1}{1}, \frac{1}{1}, \frac{-1}{2}, \frac{2}{3}, \frac{-1}{3}, \frac{1}{2}, \frac{-1}{4}, \frac{2}{5}, \frac{-1}{5}, \frac{1}{3}, \frac{-1}{6}, \ldots\right]$

$\frac{2}{4}$ $\frac{2}{6}$

1 2 3 4 5 6 7 8 9 10 11 12

$f(n)\left[\frac{2}{1}, \frac{-1}{1}, \frac{2}{2}, \frac{-1}{2}, \frac{2}{3}, \frac{-1}{3}, \frac{2}{4}, \frac{-1}{4}, \frac{2}{5}, \frac{-1}{5}, \frac{2}{6}, \frac{-1}{6} \ldots\right]$

$f(n) = (-1)^{n+1}\frac{2}{n}$ Numerator

$f(n) =$ Denominator

2 $f(1) = (-1)^{1+1}$

-1 $f(2) = (-1)^{2+1}$

1 $f(3) = (-1)^{3+1}$

$\frac{-1}{2}$ $f(4) = (-1)^{4+1}$

$\frac{2}{3}$ $f(5) = (-1)^{5+1}$

1 2 3 4 5 6 7 8 9 10 11 12

$n, n-1, n-1, n-2, n-2, n-3, n-3, n-4, n-4, n-5, n-5, n-6 \ldots$

$n-0$

$(-1)^2\frac{2}{1} = 2$ $(-1)^4\frac{2}{3} = \frac{2}{3}$ $(-1)^6\frac{2}{5} = \frac{2}{5}$

$(-1)^3\frac{2}{2} = -1$ $(-1)^5\frac{2}{4} = \frac{-1}{2}$ $(-1)^7\frac{2}{6} = \frac{-1}{3}$

1 2 3 4 5 6 7 8 9 10 11 12

0 1 1 2 2 3 3 4 4 5 5 6

I tried over and over and I think I got really close but couldn't get the denominator part of the formula for the sequence.