6)

$$\frac{p}{q} = 1 - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \cdots - \frac{1}{1318} + \frac{1}{1319}$$

Consideremos $\frac{p}{q}$ irreducible $(\mathrm{mcd}(p,q)=1)$

$$\frac{p}{q} = \left(1 + \frac{1}{3} + \frac{1}{5} + \frac{1}{1319}\right) - \left(\frac{1}{2} + \frac{1}{4} + \frac{1}{6} + \cdots + \frac{1}{1318}\right)$$

$$\frac{p}{q} = \left(1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \cdots + \frac{1}{1318} + \frac{1}{1319}\right) -$$

$$- 2\left(\frac{1}{2} + \frac{1}{4} + \frac{1}{6} + \cdots + \frac{1}{1318}\right)$$

$$\frac{p}{q} = \left(\cancel{1} + \cancel{\frac{1}{2}} + \cancel{\cdots} + \frac{1}{1319}\right) - \left(\cancel{1} + \frac{1}{2} + \frac{1}{3} + \cdots + \cancel{\frac{1}{659}}\right)$$

$$\frac{p}{q} = \frac{1}{660} + \frac{1}{661} + \cdots + \frac{1}{1319}$$

$$\frac{p}{q} = \left(\frac{1}{660} + \frac{1}{1319}\right) + \left(\frac{1}{661} + \frac{1}{1318}\right) + \cdots + \left(\frac{1}{989} + \frac{1}{990}\right)$$

$$\frac{p}{q} = \frac{1979}{660\cdot 1319} + \frac{1979}{661\cdot 1318} + \dots + \frac{1979}{989\cdot 990}$$

$$\frac{p}{q} = 1979 \underbrace{\left(\frac{1}{660\cdot 1319} + \frac{1}{661\cdot 1318} + \dots + \frac{1}{989\cdot 990}\right)}_{\frac{a}{b}}$$

$\text{mcd}(a,b) = 1$

$p\cdot b = 1979\cdot a\cdot q$

Como 1979 es primo o bien $p = \dot{1979}$ o bien $b = \dot{1979}$, Pero $b = \text{mcm}(660, \dots 990)$ y por tanto no es múltiplo de 1979

$\rightarrow \boxed{p = \dot{1979}}$