

# ON PRIME NUMBERS III

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$$\prod_{n=2}^{\infty} \left( 1 + \frac{i^{(P_n-1)}}{P_n} \right) = \frac{1}{2} \cdot \prod_{n=2}^{\infty} \left( 1 - \frac{i^{(P_n-1)}}{P_n} \right) = \frac{2}{\pi}$$

$$\prod_{n=2}^{\infty} \frac{1}{\left( 1 + \frac{i^{(P_n-1)}}{P_n} \right)} = 2 \cdot \prod_{n=2}^{\infty} \frac{1}{\left( 1 - \frac{i^{(P_n-1)}}{P_n} \right)} = \frac{\pi}{2}$$