The number $\log_2 3$ is irrational

Proof by contradiction: Assume $\log_2 3$ is rational. Choose $a, b \in N^+$, $\log_2 3 = \frac{a}{b}$, in lowest terms.

$$\log_2 3 = \frac{a}{b}$$

$$3 = 2^{\frac{a}{b}}$$

$$3^b = 2^a$$

Since 3^b is always an odd number, and 2^a is always an even number, we have that an odd number is equal to an even number. This is a contradiction.
Thus, the hypothesis is true: $\log_2 3$ is irrational.