

* Power of Three

$$3^n \rightarrow \cancel{2^{31}} \rightarrow \cancel{2^{30}} \rightarrow 2^{20} > 2^{31} - 1 > 3^{19}$$

$$\frac{3^3}{3^2} = 3^1 \Rightarrow \frac{3^{19}}{3^{18}} = 3$$

or keep dividing by 3 & check remainder.