

An elementary, but very important limit

$$\lim_{n \rightarrow \infty} r^n = \begin{cases} 0 & \text{if } |r| < 1 \\ 1 & \text{if } r = 1 \\ \text{D.N.E} & \text{if } r = -1 \\ \text{D.N.E} & \text{if } |r| > 1 \end{cases}$$
