

★ Calculation of generation time.

* Generation Time →

* If we start with one cell, when it divides there are two cells in the first generation, four cells in the second generation, eight cells in the third generation and so on.

* The interval for the formation of two cells from one is called generation and the time required for this to occur is called generation time.

$$\text{generation-time} = \frac{t \text{ (time in minutes or hours)}}{n \text{ (number of generation)}}$$

$$* N = N_0 \times 2^n$$

Applying logarithm

$$\log N = \log N_0 + n \log 2$$

$$n = \frac{\log N - \log N_0}{\log 2}$$

$$= \frac{\log N - \log N_0}{0.301}$$

$$= 3.3 \log \frac{N}{N_0}$$

where,

N_0 = number of bacteria at beginning of time interval