

$$\begin{aligned}
 2) \text{ Slope} &= \frac{F_{40} - F_{20}}{40 - 20} \\
 &= \frac{1844 - 881}{20} \\
 &= 0.4815
 \end{aligned}$$

Since,  $\log F_k$  vs  $k$  graph is linear & straight line

$$\text{Slope} = \frac{\log F_k}{k} \quad \text{let slope} = c$$

$$\log F_k = ck$$

$$F_k = e^{ck} = (e^c)^k$$

$$F_k = \phi^k \quad (\because \text{Hence, Fibonacci grows exponentially})$$

$$\phi = e^c$$

$$= e^{\text{slope}}$$

$$\phi = e^{0.4815}$$

$$\phi = 1.618$$

$$\therefore F_k = \phi^k, \quad \phi = 1.618$$