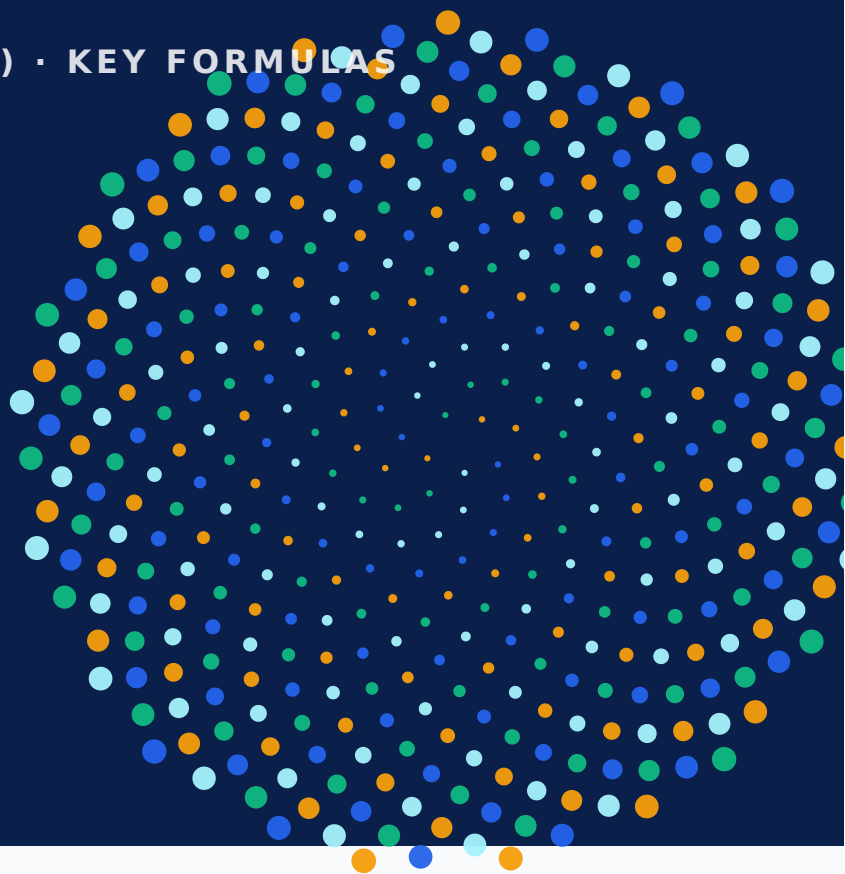


Number



Indices

$$a^m \times a^n = a^{m+n}, \quad a^m \div a^n = a^{m-n}, \quad (a^m)^n = a^{mn}, \\ a^0 = 1, \quad a^{-n} = \frac{1}{a^n}, \quad a^{\frac{m}{n}} = (\sqrt[n]{a})^m$$

Standard form

$$A \times 10^n, \quad 1 \leq A < 10, \quad n \in \mathbb{Z}$$

Surds

$$\sqrt{ab} = \sqrt{a}\sqrt{b}, \quad \frac{a}{\sqrt{b}} = \frac{a\sqrt{b}}{b}, \quad \frac{1}{c+\sqrt{b}} = \frac{c-\sqrt{b}}{c^2-b}$$

Percentage change

$$\frac{\text{new} - \text{original}}{\text{original}} \times 100\%$$

Reverse percentage

$$\text{original} = \frac{\text{new}}{1 \pm \frac{r}{100}}$$

Compound growth / decay

$$A = P \left(1 \pm \frac{r}{100} \right)^n$$

Compound measures

$$\text{speed} = \frac{\text{distance}}{\text{time}}, \quad \text{density} = \frac{\text{mass}}{\text{volume}}, \quad \text{pressure} = \frac{\text{force}}{\text{area}}$$

Sets

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$