

$$\begin{aligned} & \left(1 + \frac{1}{10}\right)^{10} \\ &= 1.1^{10} \\ &= 1.1^{\wedge}10 \quad \text{計算機の手順} \\ &= 2.5937\cdots \end{aligned}$$

赤い数字を大きくしていくと
どうなるでしょうか。

$$\begin{aligned} & \left(1 + \frac{1}{100}\right)^{100} \\ &= 1.01^{100} \\ &= 1.01^{\wedge}100 \\ &= 2.7048\cdots \end{aligned}$$

$$\left(1 + \frac{1}{1000}\right)^{1000}$$

$$= 1.001^{1000}$$

$$= 1.001^{1000}$$

$$= 2.7169\cdots$$

$$\left(1 + \frac{1}{10000}\right)^{10000}$$

$$= 1.0001^{10000}$$

$$= 1.0001^{1\text{万}}$$

$$= 2.7181\cdots$$

$$\left(1 + \frac{1}{100000}\right)^{100000}$$

$$= 1.00001^{100000}$$

$$= 2.7182\cdots$$

$$\begin{aligned} & \left(1 + \frac{1}{1000000}\right)^{1000000} \\ &= 1.000001^{1000000} \\ &= 2.718280\cdots \end{aligned}$$

ある値に近づいていってる。

$$\begin{aligned} & \left(1 + \frac{1}{10000000}\right)^{10000000} \\ &= 1.0000001^{10000000} \\ &= 2.718281\cdots \end{aligned}$$

$$\begin{aligned} & \left(1 + \frac{1}{100000000}\right)^{100000000} \\ &= 1.00000001^{100000000} \\ &= 2.7182818\cdots \end{aligned}$$

$$\begin{aligned} & \left(1 + \frac{1}{1000000000}\right)^{1000000000} \\ &= 1.0000000001^{1000000000} \\ &= 2.71828181\cdots \end{aligned}$$

$$\begin{aligned} & \lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n \\ &= 2.7182818\cdots \end{aligned}$$

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$$= e \quad (\text{自然対数})$$