

$$a_n = \frac{1}{n}, a_1, a_2, \dots \quad \begin{cases} a_1 = 1 \\ a_2 = \frac{1}{2} \end{cases}$$

$$a_1, a_2, a_3, \dots \rightarrow \frac{1}{n} \left(\frac{1}{n} \right)^n \quad (1)$$

$$a_1, a_2, a_3, \dots \rightarrow \frac{1}{n} \left(\frac{1}{n} \right)^n = \frac{1}{n} \left(\frac{1}{n} \right)^n \quad (2)$$

$$\sqrt{1 + \frac{1}{n}} = \left(\frac{1}{n} \right)^{\frac{1}{n}} \quad (3)$$

$$a_1, a_2, a_3, \dots \rightarrow \frac{a_1}{a_2} = \frac{1}{\frac{1}{2}} = 2 \rightarrow a_1 = 1 \rightarrow a_2 = 2$$

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$$a_1, a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9, a_{10} = 10 \quad (1)$$

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$$a_1, a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9, a_{10} = 10 \quad (5)$$

$$a_1 = 1$$

$$a_2 = 2$$

$$a_1, a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9, a_{10} = 10 \quad (6)$$

$$a_1, a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9, a_{10} = 10 \quad (7)$$

$$a, aa, aa^2, aa^3 \begin{cases} a+aa^2=12 \\ aa+aa^3=12 \end{cases} \rightarrow a(1+a^2)=12 \rightarrow a=\frac{12}{1+a^2}$$

$$\frac{12}{a(1+a)}(1+a^2)=12 \rightarrow \frac{1+a^2}{1+a} = 1 \rightarrow 1+a^2=1+a \rightarrow a^2=a \rightarrow a=1$$

$$\Rightarrow 1+1+1+1=4 \rightarrow 4=12 \rightarrow \text{Contradiction}$$

$$a_1+aa_2+aa_3=12 \rightarrow a_1+aa_2+aa_3=12 \rightarrow a_1=12-aa_2-aa_3$$

$$\frac{12}{a} + \frac{12}{a} + \frac{12}{a} = 12 \rightarrow \frac{36}{a} = 12 \rightarrow a=3$$

$$a_1=3, a_2=3, a_3=3$$

$$a_n=1, a_{n+1}=1, a_{n+2}=1$$

$$S_1 = 1 + \frac{1}{a} = 1 + \frac{1}{3} = \frac{4}{3}$$

$$\sqrt{(a_1 \times a_n)^n} = \left(\frac{a_1 \times a_n}{n} \right)^{\frac{n}{2}} = \left(\frac{1 \times 1}{2} \right)^{\frac{1}{2}} = \frac{1}{\sqrt{2}}$$

$$a, aa, aa^2, aa^3 \rightarrow a, aa, aa^2, aa^3 \rightarrow a, aa, aa^2, aa^3$$

$$a, aa, aa^2, aa^3 \rightarrow a, aa, aa^2, aa^3$$

$$f(x) = a + (n-1)d + (n-1)d + \dots + (n-1)d \rightarrow f(x) = a + (n-1)d$$

$$S_n = a + aa + \dots + aa^{n-1} \rightarrow S_n(a) = a + aa + \dots + aa^{n-1}$$

$$S_n - S_{n-1} = a - aa^{n-1} = a(1 - a^{n-1}) \rightarrow S_n = a \frac{1-a^n}{1-a}$$