

$$\frac{x}{y} = \frac{\omega}{\varepsilon}$$

$$\frac{n+\square}{y} = \frac{1+\sqrt{5}}{2} = \frac{2+\sqrt{5}}{\varepsilon} \Rightarrow x+\square = 2+\sqrt{5}$$

$$S = xy$$

$$\frac{S_1}{S_2} = \frac{xy}{(n+\square)y} \rightarrow \frac{S_1}{S_2} = \frac{n}{n+\square} = \frac{\omega}{2+\sqrt{5}} \quad \frac{S_2}{S_1} = \frac{2+\sqrt{5}}{\omega}$$

(1)

$$\frac{\sqrt{x^2+y^2}}{n} = \frac{1+\sqrt{5}}{2} \rightsquigarrow \varepsilon x^2 + \varepsilon y^2 = n^2 + \omega n^2 + 2n^2 \sqrt{5}$$

$$\varepsilon y^2 = 2n^2 + 2\sqrt{5}n^2$$

$$\varepsilon y^2 = n^2(2+2\sqrt{5})$$

$$\frac{x^2}{y^2} = \frac{2}{1+\sqrt{5}}$$

$$\frac{x^2}{y^2} = \frac{\varepsilon}{2+\sqrt{5}} \leftarrow y^2 = \frac{n^2(2+2\sqrt{5})}{\varepsilon}$$

(2)

$$Pa + \sqrt{Pa^2 + \varepsilon a} = 2$$

$$\sqrt{Pa^2 + \varepsilon a} = 2 - Pa$$

$$Pa^2 + \varepsilon a = 4a^2 - 4Pa + \varepsilon$$

$$0 = 3a^2 - 4Pa + \varepsilon$$

$$(a-2)(a-1) \left\{ \begin{array}{l} a = \frac{2}{\sqrt{5}} \\ a = \frac{1}{\sqrt{5}} = 2 \times \end{array} \right.$$

$$3\left(\frac{2}{\sqrt{5}}\right) + \sqrt{2\left(\frac{2}{\sqrt{5}}\right)^2 + \varepsilon\left(\frac{2}{\sqrt{5}}\right)} = 2 \quad \times$$

$$3\left(\frac{1}{\sqrt{5}}\right) + \sqrt{2\left(\frac{1}{\sqrt{5}}\right)^2 + \varepsilon\left(\frac{1}{\sqrt{5}}\right)} = 0 \quad \checkmark$$

(3)

$$\frac{a+1}{a} = 1 + \frac{1}{a}$$

$$1 + \frac{1}{a} = \frac{q}{p}$$

$$\frac{q}{p} = \varepsilon, \omega$$

$$\frac{\sqrt{n+1}}{\sqrt{n-1}+2} + \frac{\sqrt{n+1}}{\sqrt{n-1}-2} = \frac{n-1}{\sqrt{n-1}}$$

$$\frac{\sqrt{n+1}(\sqrt{n-1}+2) + \sqrt{n+1}(\sqrt{n-1}-2)}{n-1-4} = \sqrt{n-1}$$

$$\frac{\sqrt{n+1}\sqrt{n-1} + \sqrt{n+1}\sqrt{n-1}}{n-5} = \sqrt{n-1}$$

$$\frac{2\sqrt{n+1}\sqrt{n-1}}{n-5} = \sqrt{n-1}$$

(4)

$$2\sqrt{n+1} = n-5$$

$$\varepsilon n + \varepsilon = n^2 - 10n + 25$$

$$0 = n^2 - 10n + 25$$

$$n = \frac{10 \pm \sqrt{100 - 100}}{2} = 5 \pm 0 \quad n = 5$$

$$\frac{1}{\sqrt{p-m}+2} + \frac{1}{\sqrt{p-m}-2} = \frac{p-m}{2\sqrt{p-m}}$$

$$2\sqrt{p-m}$$

$$\frac{\sqrt{p-m}-2 + \sqrt{p-m}+2}{p-m-4} = \frac{\sqrt{p-m}}{2}$$

$$-m-2$$

$$\frac{-2\sqrt{p-m}}{m+2} = \frac{\sqrt{p-m}}{2}$$

$$\frac{-2}{m+2} \sqrt{p-m} = \frac{1}{2} \sqrt{p-m}$$

$$m+2 = -4 \Rightarrow m = -6$$

(5)

جواب

