

$$\textcircled{2} \quad (\sqrt{2+\sqrt{3}})^x + (\sqrt{2-\sqrt{3}})^x = 4$$

$$\sqrt{2-\sqrt{3}} \cdot \frac{\sqrt{2+\sqrt{3}}}{\sqrt{2+\sqrt{3}}} = \frac{\sqrt{4-3}}{\sqrt{2+\sqrt{3}}} = \frac{1}{\sqrt{2+\sqrt{3}}}$$

להוסיף את המכנה
: נכנסה תוצאה

$$(\sqrt{2+\sqrt{3}})^x + \frac{1}{(\sqrt{2+\sqrt{3}})^x} = 4$$

הצבה של המכנה

$$t + \frac{1}{t} = 4$$

$$(\sqrt{2+\sqrt{3}})^x = t \quad \text{כאשר}$$

$$t^2 - 4t + 1 = 0$$

$$t = \frac{4 \pm \sqrt{12}}{2} = 2 \pm \sqrt{3}$$

$$(\sqrt{2+\sqrt{3}})^x = 2 + \sqrt{3}$$

$$(2+\sqrt{3})^{\frac{1}{2}x} = 2 + \sqrt{3}$$

$$\frac{1}{2}x = 1$$

$$\boxed{x = 2}$$

$$(\sqrt{2+\sqrt{3}})^x = 2 - \sqrt{3}$$

$$(2+\sqrt{3})^{\frac{1}{2}x} = \frac{1}{2+\sqrt{3}}$$

$$(2+\sqrt{3})^{\frac{1}{2}x} = (2+\sqrt{3})^{-1}$$

$$\frac{1}{2}x = -1$$

$$\boxed{x = -2}$$