

$$\frac{\omega}{r} = \frac{x}{2} \rightarrow \frac{\omega + p}{r} = \frac{1 + \sqrt{5}}{2} \rightarrow \frac{1}{2} + \frac{p}{r} = \frac{1 + \sqrt{5}}{2} \rightarrow p = 2\sqrt{5} - 2$$

$$\frac{(2\sqrt{5} - 2) \times 2}{2\sqrt{5}} = \frac{2\sqrt{5} - 2}{\sqrt{5}} \rightarrow 2 + p = 2\sqrt{5} \rightarrow p = 2\sqrt{5} - 2$$

$$\frac{\sqrt{x^2 + x^2}}{2} = \frac{1 + \sqrt{5}}{2} \rightarrow 2\sqrt{x^2 + x^2} = x(1 + \sqrt{5})$$

$$4x^2 + 4x^2 = x^2 + 2\sqrt{5}x^2 \rightarrow 3x^2 = 2\sqrt{5}x^2 \rightarrow x^2 = \frac{2}{1 + \sqrt{5}}$$

$$\frac{x^2}{2} = \frac{2}{1 + \sqrt{5}} \rightarrow 2x^2 = 2(1 + \sqrt{5}) \rightarrow x^2 = 1 + \sqrt{5}$$

$$\sqrt{2a^2 + 2a} = 2 - 3a \rightarrow \sqrt{2a^2 + 2a} = 2 - 3a \rightarrow 2a^2 + 2a = 4 - 12a + 9a^2 \rightarrow 7a^2 - 14a + 4 = 0$$

$$a^2 - 2a + \frac{2}{7} = 0 \rightarrow (a - 1)(a - \frac{2}{7}) = 0 \rightarrow a = 1, \frac{2}{7}$$

$$\frac{\frac{2}{7} + 1}{\frac{2}{7}} = \frac{9}{2} = \frac{9}{2} \rightarrow a = \frac{2}{7}, \frac{2}{7}$$

$$(3 - \sqrt{x+1})(3 + \sqrt{x-1}) = 9 - x + 1 = 10 - x \rightarrow \frac{3\sqrt{x+1} - \sqrt{x^2-1} - 3\sqrt{x+1} - \sqrt{x^2-1}}{10-x} = \frac{-2\sqrt{x^2-1}}{10-x} = \frac{x-1}{\sqrt{x-1}}$$

$$-2\sqrt{x^2-1} = x-1 \rightarrow x^2-1 = \frac{(x-1)^2}{4} \rightarrow 4x^2-4 = x^2-2x+1 \rightarrow 3x^2-2x-5 = 0$$

$$3x^2-2x-5 = 0 \rightarrow x = \frac{2 \pm \sqrt{4+60}}{6} = \frac{2 \pm 8}{6} \rightarrow x = \frac{10}{6} = \frac{5}{3}, x = -1$$

$$\frac{2 - \sqrt{2-x} - \sqrt{2-x}}{2-x} \Rightarrow \frac{2 - \sqrt{2-x}}{2-x} = \frac{2-x}{\omega\sqrt{2-x}} \Rightarrow \frac{1}{\omega} = \frac{2-x}{\sqrt{2-x}} = \sqrt{2-x}$$

$$1 - 2x + x^2 = 4 - 4x + x^2 \rightarrow -2x + x^2 = 4 - 4x + x^2 \rightarrow 2x = 4 \rightarrow x = 2$$

$$9((1-x)^2 + x^2) = 16x^2(1-x^2) \rightarrow 9(1-2x+x^2+x^2) = 16x^2(1-x^2)$$

$$9(1-2x+2x^2) = 16x^2(1-x^2) \rightarrow 9 - 18x + 18x^2 = 16x^2 - 16x^4 \rightarrow 16x^4 - 18x^2 + 9 = 0$$

$$16x^4 - 18x^2 + 9 = 0 \rightarrow (4x^2 - 3)^2 = 0 \rightarrow 4x^2 - 3 = 0 \rightarrow x^2 = \frac{3}{4} \rightarrow x = \frac{\sqrt{3}}{2}, x = -\frac{\sqrt{3}}{2}$$

$$x = |x+2| + |x-1| \rightarrow$$

$$x = -\frac{1}{3}x + \frac{17}{3}$$

$$\begin{array}{c|c|c} -2 & & 1 \\ \hline 1-x-x^2 & (3) & (2x+1) \\ \hline -x-1 & & 1-x+x+3 \end{array}$$

$$\begin{cases} -x-1 = \frac{1}{3}x \\ -x+17 = \frac{1}{3}x \end{cases}$$

$$x = -9 \rightarrow (-9, 7)$$

$$\sqrt{\left(\frac{1}{3}\right)^2 + \left(-\frac{1}{3}\right)^2} = \frac{2\sqrt{10}}{3}$$

$$\sqrt{x^2 - 9x + 17} = |x-2| \Rightarrow |x-2| = \frac{1}{3}x + 2$$

$$x = 0, 18 \rightarrow 2 \text{ از } 18 \rightarrow |x-2| = 2-x$$

$$|x-2| = x-2 \leftarrow 18 \text{ از } 2 \leftarrow 5 = 3 \leftarrow \text{بخشی با علامت منفی و ارتفاع 3 از 2}$$

$$4 + 3 = 12$$

$$b + 9 = 0 \rightarrow \frac{1}{b+9} + \frac{1}{b} = \frac{2b+9}{(b+9)b} = \frac{1}{b} - 10$$

$$x^2 - 31x - 180 = 0 \leftarrow 9x^2 + 9x = 5x + 180$$

$$(x-39)(x+5) \rightarrow x = 39, -5$$