

$$\frac{a+b}{a'} = \frac{a'}{b} \quad f \sim b \quad \boxed{a}$$

$$\frac{a+f}{a'} = \frac{a'}{f} \quad \frac{S_2}{S_1} = \frac{ba'}{ba} = \frac{a'}{a} = \frac{1+\sqrt{5}}{5}$$

$$a^2 - 5a + 4 = 0$$

$$a' = \frac{5 \pm \sqrt{25-16}}{5} = \frac{5 \pm 3}{5} = 2 \text{ و } 4$$

$$\frac{c}{b} = \frac{1+\sqrt{5}}{5} = \frac{1}{\sin \alpha} \quad \sin \alpha = \frac{5}{1+\sqrt{5}} \quad \sin^2 \alpha = \frac{25}{4+4\sqrt{5}} = \frac{5}{1+\sqrt{5}}$$

$$\cos^2 \alpha = 1 - \sin^2 \alpha = 1 - \frac{5}{1+\sqrt{5}} = \frac{1+\sqrt{5}-5}{1+\sqrt{5}} = \frac{-4+\sqrt{5}}{1+\sqrt{5}}$$

$$\left(\frac{b}{a}\right)^2 = (\tan \alpha)^2 = \frac{1}{\cos^2 \alpha} - 1 = \frac{1+\sqrt{5}}{-4+\sqrt{5}} - 1 = \boxed{\frac{5}{1+\sqrt{5}}}$$

$$\sqrt{2a^2+5a} = 5-3a$$

$$\Rightarrow 2a^2+5a = 25-30a+9a^2$$

$$\Rightarrow 7a^2-35a+25=0$$

$$a = \frac{35 \pm \sqrt{1225-700}}{14} = \frac{35 \pm 25}{14} = 5 \text{ و } \frac{5}{7}$$

$$a \neq 5 \Rightarrow a = \frac{5}{7}$$

$$\frac{a+1}{a} = 1 + \frac{1}{a} = 1 + \frac{7}{5} = \boxed{\frac{12}{5}}$$

$$\sqrt{x+1} \left(\frac{1}{x+\sqrt{x-1}} - \frac{1}{x-\sqrt{x-1}} \right) = \sqrt{x-1}$$

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

$$\sqrt{x+1} \left(\frac{-2\sqrt{x-1}}{x^2-x+1} \right) = \sqrt{x-1} \quad \Rightarrow \quad \frac{\sqrt{x+1}}{x^2-x+1} (-2) = 1$$

$$\sqrt{x+1} = \frac{10-x}{-2} = \frac{x-10}{2}$$

$$x^2+1 = \frac{(x-10)^2}{4} \Rightarrow 4x^2+4 = x^2-20x+100 \Rightarrow 3x^2+20x-96=0$$

$$x \neq 10, 1 \quad 570 \quad 170$$

$$\boxed{2 \text{ ریشه مثبت}}$$

$$\frac{y-\sqrt{y-x}-\sqrt{y-x}-y}{x-(y-x)} = \frac{\sqrt{y-x}}{x}$$

$$\Rightarrow \frac{-2\sqrt{y-x}}{x-x+y} = \frac{\sqrt{y-x}}{x} \Rightarrow -10 = y+x \Rightarrow \boxed{x=-13}$$

$$\frac{1}{x^2} + \frac{1}{(1-x)^2} = \frac{(1-x)^2 + x^2}{x^2(1-x)^2} = \frac{x^2 - 2x + 1 + x^2}{x^2(x-1)^2} = \frac{2x^2 - 2x + 1}{x^2(x-1)^2} = \frac{140}{9}$$

$$x(x-1) = t \Rightarrow \frac{2t+1}{t^2} = \frac{140}{9} \Rightarrow 140t^2 - 18t - 9 = 0$$

$$x^2 - x - t = 0 \quad t = \frac{18 \pm \sqrt{18^2 + 4 \times 140 \times 9}}{2 \times 140} = \frac{18 \pm 114}{280} = \frac{-3}{14} \text{ or } \frac{94}{70}$$

$$\Delta = -1 + 4t \Rightarrow \Delta > 0 \Rightarrow x^2 - x - t, \quad \text{الحقیقی} \Rightarrow S_1 = 1$$

$$t > -\frac{1}{4} \Rightarrow x^2 - x - t, \quad \text{الحقیقی} \Rightarrow S_4 = 1 \quad \boxed{S = 2}$$

دائره تابع 1 با معین سلامت به دست می آید.

$$0 < -x^3 + 6x^2 + 40x - 100 = -(x+5)(x-10)(x-2)$$

$$\begin{array}{c|ccc} x & -5 & 2 & 10 \\ \hline & + & - & + \end{array}$$

$$\Rightarrow D_f = F$$

$$0 < -x^3 + 6x^2 - 1 = -(x-1)(x-2)$$

$$\begin{array}{c|ccc} x & 1 & 2 & \\ \hline & - & + & - \end{array}$$

$$\sqrt{F+0} + \sqrt{14+0} = 2+F=4 \quad \text{وق}$$

یک جواب

$$y = \frac{-x+14}{2}$$

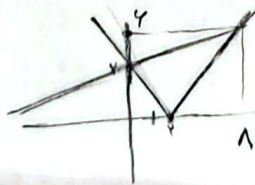
$$y = \begin{cases} 2x+1 & x \geq 1 \\ 3 & 1 \geq x \geq -2 \\ -2x-1 & x \leq -2 \end{cases}$$

$$\frac{-x+14}{2} = 2x+1 \Rightarrow -x+14 = 4x+2 \Rightarrow x=2 \quad \text{وق} \quad A = (2, 5)$$

$$\frac{-x+14}{2} = -2x-1 \Rightarrow -x+14 = -4x-2 \Rightarrow x=-4 \quad \text{وق} \quad B = (-4, 9)$$

$$AB = \sqrt{4^2 + 4^2} = \sqrt{60} = \boxed{2\sqrt{15}}$$

$$\sqrt{x^2 - 6x + 6} = \sqrt{(x-3)^2} = |x-3|$$



$$\begin{aligned} \frac{1}{2}x + 2 &= x - 4 \\ x &= \frac{1}{2}x \\ x &= 8 \end{aligned}$$

$$(1, 4), (0, 2), (0, 2)$$

$$S = \frac{1}{4} |x - 12 - 12| = \frac{1}{4} |x| = \boxed{12}$$

$$\frac{1}{x} + \frac{1}{x+9} = \frac{1}{40} \Rightarrow \frac{4x+9}{x(x+9)} = \frac{1}{40} \Rightarrow 4x^2 + 9x = 40x + 360$$

$$x^2 - 41x - 360 = 0$$

$$(x+9)(x-40) = 0$$

$$\Rightarrow \boxed{x = 40}$$

$$x = \text{نشان روز}$$