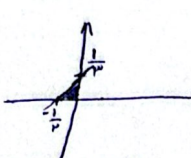
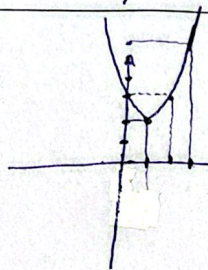
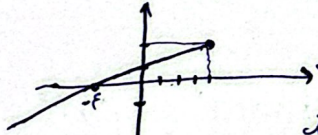


نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ... کلاس ... $2y = 3x - 1 \Rightarrow 3x = 2y + 1 \Rightarrow x = \frac{2}{3}y + \frac{1}{3} \Rightarrow f^{-1}(x) = \frac{2}{3}x + \frac{1}{3}$ $\Rightarrow f^{-1}(0) = \frac{1}{3}$ $f^{-1}(x) = 0 \Rightarrow \frac{2}{3}x + \frac{1}{3} = 0 \Rightarrow \frac{2}{3}x = -\frac{1}{3} \Rightarrow x = -\frac{1}{2} \times \frac{3}{2} = -\frac{1}{4}$ $f^{-1}(x) \Big _{\frac{1}{3}}^{\frac{1}{4}}$ $\Big _{\frac{1}{3}}^{\frac{1}{4}}$  $S_{\Delta} = \frac{1}{2} \times \left(\frac{1}{3} \times \frac{1}{4} \right) = \frac{1}{24}$	نام خانوادگی ...
$y = x^2 - 2x + 3$ $\begin{matrix} 1 \\ 2 \end{matrix}$  $y = (x-1)^2 + 2 \Rightarrow y - 2 = (x-1)^2 \Rightarrow x-1 = \pm \sqrt{y-2} \Rightarrow x = 1 \pm \sqrt{y-2}$ $f^{-1}(x) = 1 \pm \sqrt{x-2} + 1 \Rightarrow \begin{cases} R_{\text{بالا}} = [2, +\infty) & D_{f^{-1}} = [2, +\infty) \\ R_{\text{پایین}} = [2, +\infty) & D_{f^{-1}} = [2, +\infty) \end{cases}$	باقی به شکل هر در بازه $[1, +\infty)$ و $[3, +\infty)$ یک یک است.
$f(x) = 2x - \sqrt{14 - 14x + 4x^2} = 2x - \sqrt{(2x-4)^2} = 2x - 2x-4 \Rightarrow f(x) = \begin{cases} 4 & x \geq 2 \\ 4x-8 & x < 2 \end{cases}$ $y = 4x-8 \Rightarrow 4x = y+8 \Rightarrow x = \frac{1}{4}y + 2 \Rightarrow f^{-1}(x) = \frac{1}{4}x + 2$ $D_{f^{-1}} = (-\infty, 2]$  $S_{\Delta} = \frac{1}{2} (1 \times 2) = 1$ $S_{\Delta} = \frac{1}{2} (4 \times 1) = 2 \Rightarrow 1 - 2 = -1$	در این صورت ...
$y_1 = y_2 \Rightarrow x_1 = x_2$ $\frac{x_1}{\sqrt{x_1^2 - 5}} = \frac{x_2}{\sqrt{x_2^2 - 5}} \Rightarrow \frac{x_1^2}{x_1^2 - 5} = \frac{x_2^2}{x_2^2 - 5} \Rightarrow x_1^2(x_2^2 - 5) = x_2^2(x_1^2 - 5) \Rightarrow 0x_1^2 = 0x_2^2 \Rightarrow x_1^2 = x_2^2 \Rightarrow x_1 = \pm x_2$ $x = \frac{y}{\sqrt{y^2 - 5}} \Rightarrow x^2 = \frac{y^2}{y^2 - 5} \Rightarrow y^2 = \frac{5x^2}{x^2 - 1} \Rightarrow y = \pm \sqrt{\frac{5x^2}{x^2 - 1}}$	...
$g(x) =$  $x^2 - 4x + K = 0 \Rightarrow y_3 = K - 4$ $-x^2 + 4x + 3K = 0 \Rightarrow -x^2 + 4x + 3K = 1 + 3K$ $1 + 3K \leq K - 4 \Rightarrow 2K \leq -5 \Rightarrow K \leq -\frac{5}{2}$	...

$$f(x) = \begin{cases} \frac{1}{x} & x \neq 0 \\ 0 & x = 0 \end{cases} \Rightarrow f^{-1}(x) = \begin{cases} \frac{1}{x} & x \neq 0 \\ 0 & x = 0 \end{cases} \quad \begin{aligned} a+b &= \frac{1}{x} \\ a-b &= \frac{1}{x} \end{aligned} \Rightarrow \begin{aligned} 2a &= \frac{2}{x} \Rightarrow a = \frac{1}{x} \\ b &= 0 \end{aligned}$$

$$\Rightarrow ab = \frac{1}{x} \times 0 = 0$$

$$f(2) = 10 \Rightarrow \frac{2^2(2)+6}{2+2} = 10 \Rightarrow \frac{10}{4} = 10 \Rightarrow 2+m = -1 \Rightarrow m = -3 \Rightarrow f(x) = \frac{3x+6}{x-3}$$

$$\stackrel{a+d}{\Rightarrow} f(x) = f^{-1}(x) \quad y = f \circ f^{-1}(x) + f^{-1}(x) = x + \frac{3x+6}{x-3} = \frac{x^2 + 3x + 6}{x-3}$$

$$\frac{x^2+6}{x-3} \Rightarrow y = \frac{x^2+6}{x-3} \Rightarrow \frac{x^2+6}{x-3} = x \Rightarrow x^2+6 = x^2-3x \Rightarrow 3x = -6 \Rightarrow x = -2$$

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

$$f(2-2x) = 1 \Rightarrow f^{-1}(1) = 2-2x \Rightarrow f^{-1}(1) = 2-2(2g^{-1}(1)) = 2-4g^{-1}(1)$$

$$4g^{-1}(1) + f^{-1}(1) = 2 \stackrel{1=2}{\Rightarrow} 4g^{-1}(1) + f^{-1}(1) = 2$$

$$y = \frac{-2x+1}{1+x} \Rightarrow y = \frac{2x+1}{1+x} \Rightarrow \frac{2(x-2)+1}{1+(x-2)} = \frac{2x-3}{x-1}$$

$$\Rightarrow \frac{2x+1}{x-1} + \frac{-2x+1}{x-1} = \frac{2x+4}{x-1}$$

محل برخورد دو خط نام همگراست اما انعکاسشان همان نقطه برخورد است
خط \$y=x\$ است

$$\frac{2x+4}{x-1} = x \Rightarrow 2x+4 = x^2-x \Rightarrow x^2-3x-4 = 0 \Rightarrow \frac{-b}{a} = \frac{+3}{1} = +3$$

$$y = x + f[x] \Rightarrow x = y + f[y]$$

$$[x] = [y + f[y]] = [x] = 0[y] \Rightarrow [y] = \frac{1}{0}[x] \Rightarrow y = x + \frac{1}{0}[x]$$

$$f(x) \cdot g(x) = x + f[x] - x + \frac{1}{0}[x] = \frac{1}{0}[x] + \frac{1}{0}[x] = \frac{2}{0}[x]$$