

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

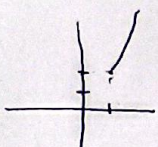
$$\begin{cases} \text{برخورد با } y : x=0 \Rightarrow y=\frac{1}{3} \\ \text{برخورد با } x : y=0 \Rightarrow x=-\frac{1}{2} \end{cases}$$

$$S: \frac{1}{\frac{1}{2}} \times \frac{1}{\frac{1}{3}} \times \frac{1}{\frac{1}{4}} = \frac{1}{12}$$

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الف) $\Delta L_0 \Rightarrow$ دایره ندارد



$$\frac{-b}{2a} = 1 = \text{رأس } x$$

$$2 = \text{رأس } y$$

یک به یک است زیرا رأس سهمی موزانته است

$$\text{معکوس: } x = y^2 - 2y + 1 + 2 \Rightarrow x = (y-1)^2 + 2$$

$$\Rightarrow x-2 = (y-1)^2 \Rightarrow y^{-1} = \sqrt{x-2} + 1$$

$$D_{y^{-1}} = [2, +\infty)$$

یک به یک است زیرا x دارای در دامنه وجود ندارد

$$\text{مثابه الف: } y^{-1} = \sqrt{x-2} + 1 \text{ معکوس}$$

$$D_y = R_{y^{-1}} = [3, +\infty)$$

$$R_y = D_{y^{-1}} = [4, +\infty)$$

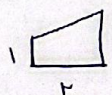
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چون در معکوس $y \geq -1$ بوده

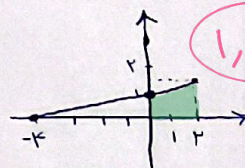
$$2m - \sqrt{14-14m+4m^2} \Rightarrow 2m - \sqrt{4(m-2)^2} = 2m - 2|m-2|$$

$$\begin{array}{l} 2m+2m-2 \\ y=4m-2 \end{array} \quad \begin{array}{l} 2m-2m+2 \\ y=2 \end{array}$$



$$f^{-1}(m): x = 4y - 2 \Rightarrow y = \frac{x}{4} + 1$$

$$S = \frac{4(1+2)}{2} = 6$$



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$$\frac{x_1}{\sqrt{x_1^2-5}} = \frac{x_2}{\sqrt{x_2^2-5}} \Rightarrow x_1^2 x_2^2 - 5 x_1^2 = x_1^2 x_2^2 - 5 x_2^2$$

$$x_1 = \pm x_2$$

$$x = \frac{y}{\sqrt{y^2-5}} \Rightarrow m^2 = \frac{y^2}{y^2-5} \Rightarrow x^2 y^2 - 5 x^2 = y^2 \Rightarrow y^2 (m^2 - 1) = 5 m^2$$

$$\Rightarrow y^2 = \frac{5 m^2}{m^2 - 1} \Rightarrow y = \frac{\sqrt{5} x}{\sqrt{m^2 - 1}}$$

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$$\begin{cases} \frac{K}{2} = 2 = \text{رأس } x \Rightarrow \text{تابع الگوریتمی} & (2, K-2) \\ \frac{-4}{-2} = 3 = \text{رأس } x \Rightarrow \text{تابع الگوریتمی} & (2, 1+3K) \end{cases}$$

$$1+3K \leq K-2 \Rightarrow K \leq -6$$

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$$f(x) = kx \quad x \geq 0 \Rightarrow f^{-1}(x) = \frac{x}{k}$$

$$f(x) = vx \quad x < 0 \Rightarrow f^{-1}(x) = \frac{x}{v}$$

$$g(x) = \begin{cases} ax+b & x \geq 0 \\ ax-b & x < 0 \end{cases} \Rightarrow \begin{cases} a+b = \frac{1}{k} \\ a-b = \frac{1}{v} \end{cases}$$

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

$$vb = \frac{1}{k} - \frac{1}{v}$$

$$b = \frac{-1}{\lambda} \quad a = \frac{v}{\lambda}$$

$$ab = \frac{-1}{\lambda} \times \frac{v}{\lambda} = \frac{-v}{\lambda^2}$$

$$-10 = \frac{9+k}{v+m} \Rightarrow -10 \cdot -10 \cdot m = 10 \Rightarrow m = -10 \Rightarrow f(x) = \frac{vx+k}{x-v}$$

$$a = -d \Rightarrow f(x) = f^{-1}(x) \quad \cancel{f} \circ \cancel{f^{-1}}(x) = x$$

$$\Rightarrow x + \frac{vx+k}{x-v} \Rightarrow \frac{x^2+k}{x-v} = x \Rightarrow \cancel{x^2+k} = \cancel{x^2} - vx \Rightarrow x = \frac{-k}{v}$$

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$$w-vx = f^{-1}(y), \quad g^{-1}(v-y) = \frac{x}{v} \quad \frac{w}{v} - \frac{1}{v} f^{-1}(y) = v g^{-1}(v-y)$$

$$x = \frac{w}{v} - \frac{1}{v} f^{-1}(y) \quad x = v g^{-1}(v-y) \quad \left\{ \begin{array}{l} \frac{w}{v} - \frac{1}{v} f^{-1}(-v) = v g^{-1}(k) \end{array} \right.$$

$$\Rightarrow w - f^{-1}(-v) = k g^{-1}(k) \Rightarrow k g^{-1}(k) + f^{-1}(-v) = w - f^{-1}(-v)$$

$$+ f^{-1}(-v) = w$$

$$y = - \left(\frac{-\Delta x - 13}{x+1} \right) = \frac{\Delta x + 13}{1+x} \Rightarrow \frac{\Delta(x-v) + 13}{1+(x-v)} - w$$

$$\Rightarrow \frac{\Delta x - 10 + 13 - vx + w}{x-1} = \frac{vx+y}{x-1} = f(x) \Rightarrow \text{دورين كينج} \Rightarrow f^{-1}(x) = \frac{x+y}{x-v}$$

$$\frac{x+y}{x-v} = \frac{vx+y}{x-1} \Rightarrow x^2 + \Delta x - y = vx^2 - kx + yx - 12 \Rightarrow x^2 - vx - y = 0$$

$$x = \frac{w \pm \sqrt{4-kx-y}}{v} \Rightarrow x_1 + x_2 = \frac{w}{v} + \frac{w}{v} = w$$

$$f(x) = x + k[x]$$

$$x = y + k[y] \Rightarrow [x] = [y] + k[y] = \Delta[y] \Rightarrow [y] = \frac{[x]}{\Delta}$$

$$\Rightarrow x = y + kx \frac{[x]}{\Delta} \Rightarrow \cancel{g(x)} = x - \frac{k}{\Delta} [x]$$

$$x + k[x] - x + \frac{k}{\Delta} [x] = \frac{vk}{\Delta} [x]$$