

$$x=1 \rightarrow f(1) + f(1) = 3 + f(1)$$

$$f(1) = 3$$

?

$$f(1x+1) + f(x+1) = 3x + 3$$

$$\frac{x^3 - 4x}{x+2} = \frac{(x+2)(x^2 - 2x)}{x+2} = x^2 - 2x \xrightarrow{x=-2} f - (2)(-2) = 1$$

$$D: \mathbb{R} - \{ -2 \}$$

$$D: \mathbb{R} - \{ a, b \}$$

$$\rightarrow a, b \rightarrow \mathbb{R} - \{ -2, -2 \}$$

$$\text{راس} = \frac{-b}{2a} = \frac{2}{2} = 1$$

$$y = 1 - 2 = -1 \rightarrow c$$

$$f\left(\frac{-c}{-2}\right) = f(-1) = 0$$

$$\sqrt[3]{(x-2)^3} = \sqrt[3]{x^3 - 4x^2 + 12x - 8} = x - 2$$

$$a = -4 \quad b = 12$$

$$f(x) = x - 2 \begin{cases} f(-4) = -6 \\ f(12) = 10 \end{cases}$$

$$\mathbb{R}: [-1, 1]$$

$$\frac{x+1}{1-x} \geq 0 \quad \left. \begin{array}{c} \text{دامنه} \\ [-1, 1) \end{array} \right\}$$

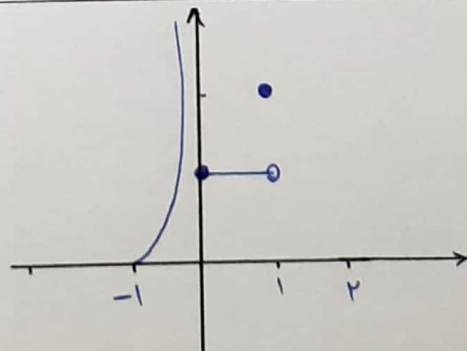
$$\frac{ax^2 - 1}{x^2 + b} = y$$

$$x^2 \begin{cases} \text{max} \rightarrow \infty \rightarrow a \rightarrow a=1 \\ \text{min} \rightarrow 0 \rightarrow \frac{-1}{b} \rightarrow \frac{-1}{b} = -1 \end{cases}$$

$$a+b = 1+1 = 2$$

$$b=1$$

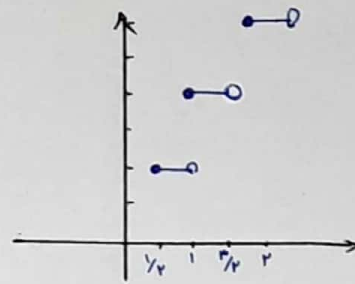
$$\begin{aligned} -1 \leq x < 0 &\rightarrow \frac{[x]}{x} - 1 = \frac{-1-x}{x} \\ 0 \leq x < 1 &\rightarrow 0 + 1 = 1 \\ x=1 &\rightarrow 1 + 1 = 2 \end{aligned}$$



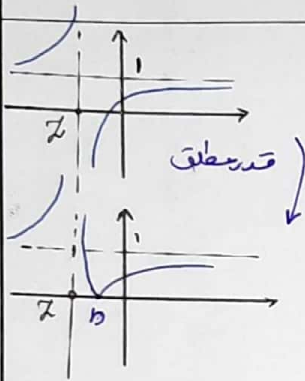
$$\frac{1}{4} < x < 1 \rightarrow 0 + 1 = 1$$

$$1 < x < \frac{3}{4} \rightarrow 1 + 1 = 2$$

$$\frac{3}{4} < x < 2 \rightarrow 1 + 2 = 3$$



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$$y = \left| \frac{1+x}{ax+3} \right|$$

$$\frac{1}{a} = 1 \rightarrow a = 1$$

$$1+b=0 \rightarrow b=-1$$

$$a+b = 1+(-1) = 0$$

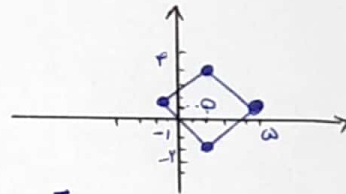
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$$\begin{aligned} x-x+y-1 &= 3 \\ y &= x+4 \end{aligned}$$

$$\begin{aligned} x-2+y-1 &= 3 \\ y &= -x+6 \end{aligned}$$

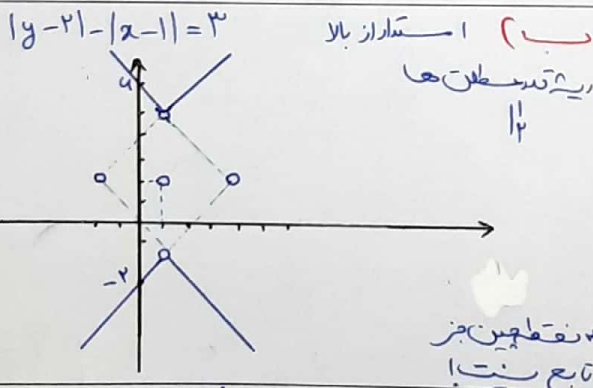
$$\begin{aligned} 2-x+1-y &= 3 \\ y &= -x \end{aligned}$$

$$\begin{aligned} x-2+1-y &= 3 \\ y &= x-4 \end{aligned}$$



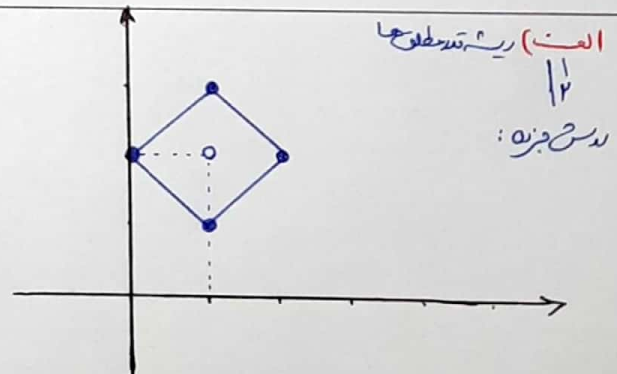
نقطه هم در
ضایحه است

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1- استاندارد بالا
ریشه تبدیل ها
1/2

* نقطه چین جز
تابع نیست!

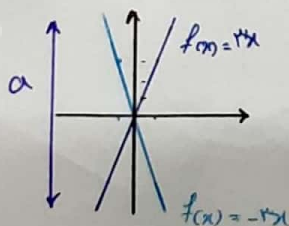


الف) ریشه تبدیل ها
1/2
درجه فرد:

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$$\begin{aligned} x < 0 &\rightarrow f(x) = 3x - ax = (3-a)x \rightarrow 3-a > 0 \\ x > 0 &\rightarrow f(x) = 3x + ax \rightarrow 3+a > 0 \end{aligned}$$

$$\begin{aligned} x < 0 &\rightarrow 3-a > 0 \\ x > 0 &\rightarrow 3+a > 0 \end{aligned}$$



$$-3 < a < 3$$

* b تیری نخواهد داشت!

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