

نیسا مستقیم زانسان هم‌مقدّر B
 $(x, x+y), (\sqrt{3}x-y, -\varepsilon) \rightarrow 2x(x-y=9) \rightarrow 4x-2y=18$
 $x+y=-\varepsilon \implies 7x=18$
 $x=2, y=-3$

ب) $(-1, -3) \left(\frac{1}{x} - \frac{1}{y} = -1 \right)$

د) $\left(\frac{1}{x} - \frac{1}{y} = -1 \right) \rightarrow \frac{-y}{x} + \frac{x}{y} = -1$

$\frac{x}{y} - \frac{y}{x} = -1$

$-1 = \frac{xy}{xy} \implies \frac{-x^2}{xy} = \frac{-y^2}{xy}$
 $-x^2 = -y^2 \implies x = -y$

۱۹ آفرین (smiley face)

$f = \{ (a, 2a), (b, a+1), (1, -2), (2, b) \}$
 $(-2, -4)$
 $a+1 = -2 \implies a = -3$

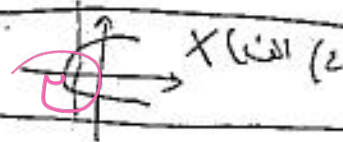
$f(1) + 2f(2) = 3f(1)$
 $-4 + 2b = -4 - 3b = 0$

$f = \{ (-1, m^2-3m), (2, 5), (-b, -2), (m+1, 4), (2, \varepsilon), (m^2+2, \varepsilon m+1) \}$

دو نقطه

$m^2 - 3m = 2 \rightarrow m^2 - 3m + 2 = 0 \rightarrow (m-2)(m-1) = 0 \rightarrow m=2, m=1$
 ← به بالای ضلع قرار می‌دهد تابع نمی‌باشد

ب) است (ج) نیست (> است)



تابع است ✓ $x \geq 0, y = -\sqrt{x+1} \rightarrow x+1 \geq 0$

ب) $x = \frac{y}{\sqrt{1-y^2}} \xrightarrow{x=1} \sqrt{1-y^2} = y \rightarrow 1-y^2 = y^2 \rightarrow 1 = 2y^2 \rightarrow y^2 = \frac{1}{2} \rightarrow y = \pm \frac{1}{\sqrt{2}}$

تابع نیست به ازای $y = \frac{1}{\sqrt{2}}$ حاصل عبارت منفی است!

الف) $|y| = x \xrightarrow{x=1} |y| = 1 \rightarrow y = \pm 1$

ب) $y^3 + 3y^2 - 3y = -(x^3 + x)$
 آن تابع نیست
 طبق آن $y^3 + y$ تابع است

$f(x) = \frac{x^2 + \varepsilon x + \omega}{x^2 + \varepsilon x + \nu} \rightarrow x^2 + \varepsilon x \xrightarrow{x=\sqrt{3}-2} (\sqrt{3}-2)^2 + \varepsilon(\sqrt{3}-2) = f(\sqrt{3}-2)$

$= 3 + \varepsilon - \varepsilon\sqrt{3} + \varepsilon\sqrt{3} - 4 = -1$

$\implies f(\sqrt{3}-2) = \frac{-1+\omega}{-1+\nu} = \frac{\varepsilon}{\nu}$

$\frac{1-\varepsilon}{f(x)} \rightarrow -\varepsilon = -1 - a + b \implies -3 = b - a$
 $\frac{1-\varepsilon}{f(x)} \rightarrow y = 1x - a \implies -3 = -1 - a$
 $a = 1, b = -2$

$f(x) = y \implies x^3 + x - 2 = 1x^3 - 1 \rightarrow x^3 - 2x - 1 = 0$

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$$f = \{(b, a+b), (1, ka), (-1, a-rb+1)\}$$

$$f(x) = k$$

(4)

$$a+b = ka \rightarrow b = a$$

$$a - rb + 1 = ka \rightarrow -a + 1 = ka \rightarrow ka = 1 \quad a = \frac{1}{k}$$

$$f(x) = \frac{f \cdot x^k - ax + c + 1}{bx + k}$$

$$x=0 \Rightarrow \frac{c+1}{k} = 0 \Rightarrow c = -1$$

$$\frac{a+b+c}{1-1} = ?$$

(6)

$$x=1 \Rightarrow \frac{f-a+(1)+1}{b+k} = 1 \Rightarrow b+k = f-a \Rightarrow b+a=1$$

$$x = \frac{y}{\sqrt{1-y^2}} \rightarrow \frac{y_1}{\sqrt{1-y_1^2}} = \frac{y_2}{\sqrt{1-y_2^2}} \rightarrow \frac{y_1^2}{1-y_1^2} = \frac{y_2^2}{1-y_2^2}$$

(5)

$$\rightarrow y_1^2 - y_1^2 y_2^2 = y_2^2 - y_1^2 y_2^2 \xrightarrow{\text{هم ضرب}} y_1 = y_2 \rightarrow \text{رابطه تابعیت}$$

$$y - kx + a = 0 \xrightarrow{(-1, -2)} -(-2) + k + a = 0 \rightarrow a = 1$$

(1)

$$y = x^k + ax + b \xrightarrow{(-1, -2)} -2 = -1 - 1 + b \rightarrow b = -2$$

$$kx - 1 = x^k + x - 2 \rightarrow x^k - kx - 1 = 0 \xrightarrow{x=-1} (x+1)(x^k - x - 1) = 0 \rightarrow \Delta > 0 \rightarrow S = -\frac{b}{a} = 1$$