

الف) $f = f((2,2), (1,0), (3,2), (n,2), (-1,2))$ (1)

$$n^2 - n = 2 \Rightarrow n^2 - n - 2 = 0 \Rightarrow (n-2)(n+1) = 0$$

$$n=3$$

$$n=2$$

$$n=2$$

$$n=-1$$

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ب) $f = f((-1,2), (1,2), (2,2), (a, n-1), (a+2, n), (n,2))$ (2)

$$n=2$$

$$a=-1$$

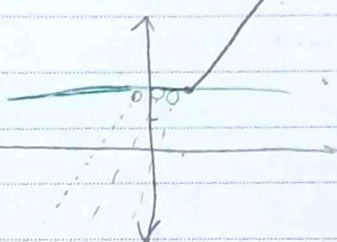
$$n=2$$

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$$1+a \leq 2$$

$$a \leq 1$$

نقطه
قرار



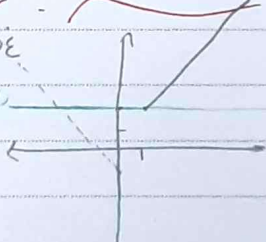
$$f(x) = \begin{cases} 2x-1 & x > 1 \\ x+a & x < 1 \end{cases}$$

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مسئله
نوع
آن
جواب
توان
برابر
مورد

$$I) a \geq 0$$

نقطه
قرار



$$f(x) = \begin{cases} 2x-1 & x > 1 \\ ax+a-1 & x < 1 \end{cases}$$

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$$a \geq 0: 0+a-1 \leq 2$$

$$II) a \leq 3$$

الر $a=0$ خوا $y=-1$ هم زیر معادله قرار می گیرد است پس قق است.

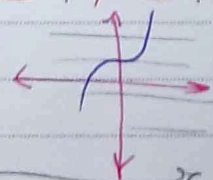
$$I \cup II \Rightarrow 0 \leq x < 3$$

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الف) $y = x^2 + 2$

$$x = y^2 + 2$$

$$y^2 = x - 2$$



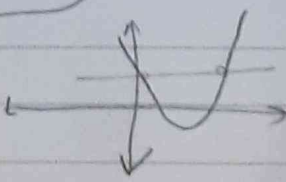
$$y = \sqrt{x-2}$$

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ب) $y = x^2 - 4x + 2$

$$x = y^2 + 2$$

$$y^2 = x - 2$$



Arman

الف) $y = \frac{2x+1}{x-2}$

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

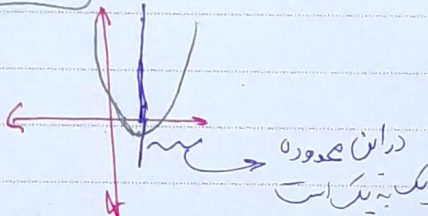
ب) $y = \frac{2x+4}{x+2} = 2$

الف) $y = \sqrt{x-2}$ یک بریک است

$x = y^2 - 2$

$x^2 = y - 2 \Rightarrow y = x^2 + 2$ $Df^{-1} = [0, +\infty)$

$y = x^2 - 4x + 3$
 $\frac{4-1+3}{-1} = -1$



$x = y^2 - 4y + 3 \Rightarrow (y-2)^2 - 1 = x \Rightarrow (y-2)^2 = x+1$

$y-2 = \sqrt{x+1} \Rightarrow y = \sqrt{x+1} + 2$ $Df^{-1} = [-1, +\infty)$

$f^{-1} = ax + b + \sqrt{x-c}$

$(0, +\infty)$ در بازه $f(x) = x + \sqrt{x}$

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

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

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

$a=1$ $b=\frac{1}{t^2}$ $c=-\frac{1}{t^2}$

$1+1-1=1$

$$\frac{x_1}{\sqrt{x_1^2 - 2}} = \frac{x_2}{\sqrt{x_2^2 - 2}} \Rightarrow \frac{x_1^2}{x_1^2 - 2} = \frac{x_2^2}{x_2^2 - 2} \quad y \quad \boxed{\frac{x}{\sqrt{x^2 - 2}}}$$

$$\frac{x}{x^2 - 2} = \frac{x}{x^2 - 2}$$

تفصيل در صورت:

$$x_1^2/x = x_2^2/x \Rightarrow x_1 = \pm x_2$$

هم در امتحان پس میں بہت ۲ مقدار قرین ہیں یہی ہے کہ $x_1 = x_2$ یا $x_1 = -x_2$

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

$$y = \pm \sqrt{\frac{2x^2}{x^2 - 1}}$$

یہی ہے کہ $x_1 = x_2$ یا $x_1 = -x_2$

$$f^{-1}(x) = \frac{x}{1+x}$$

$$g(x) = \sqrt{x} - 1$$

$$\frac{-1}{5} = \frac{x}{1+x} \Rightarrow -1 - |x| = 5x \quad \left\{ \begin{array}{l} x^2 - 2 - 2x = 5x \Rightarrow x = -\frac{1}{5} \\ x^2 - 2 + 2x = 5x \Rightarrow x = -\frac{2}{5} \end{array} \right.$$

$$\frac{-1}{5} = \sqrt{x} - 1 \Rightarrow \sqrt{x} = \frac{4}{5} \Rightarrow x = \frac{16}{25}$$

$$\frac{25}{25} - \frac{80}{25} = \frac{-12}{25}$$

$$g^{-1}(12) = ?$$

$$g(x) = f(x) + \sqrt{f(x)}$$

$$f^{-1}(x) = \sqrt{x-1}$$

$$f(x) + \sqrt{f(x)} = 12$$

$$m + \sqrt{m} = 12$$

$$f^{-1}(x) = \sqrt{x-1}$$