

در تمام موارد در دست داده بدوزند

سوال ۱:

$$f = \{(3, 2), (n, \omega), (3, n^2 - n), (m, 2), (-1, 4)\}$$

$$m = 3 \quad n^2 - n = 2 \rightarrow n^2 - n - 2 = 0 \quad (n+1)(n-2) = 0$$

$$n = -1 \quad n = 2$$

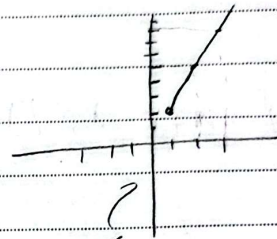
✓

$$f = \{(-1, 1), (1, 2), (2, 3), (a, m-1), (a+2, n), (m, 3)\}$$

$$m = 2 \quad a = -1 \quad (-1+2, n) = (1, n) \rightarrow n = 2$$

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

$x=1 \rightarrow 2-1=1$
 $x=2 \rightarrow 4-1=3$
 $x=3 \rightarrow 6-1=5$



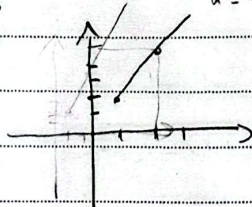
سوال ۲:

$$f(1) - 1 = 1 + a \Rightarrow a = 1$$

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

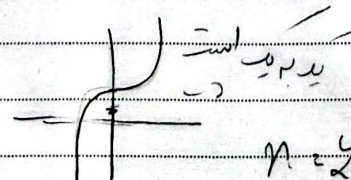
$$f(x) = \begin{cases} 2x-1; & x \geq 1 \\ ax+a-1; & x < 1 \end{cases}$$

$x=0 \rightarrow a-1=2 \Rightarrow a=3$
 $a-1 < 2-1 < 2$
 $a < 3$



سوال ۳:

$$y = n^3 + 2$$



سوال ۴:

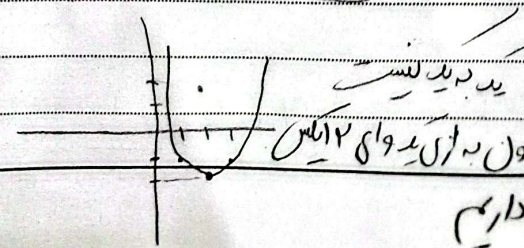
$$n = 2^3 + 2 \rightarrow n - 2 = 2^3$$

$$2 = \sqrt[3]{n-2}$$

$$y = n^3 - (n+2) \quad \frac{b}{a} = \frac{1}{2} = \frac{1}{2}$$

$$Arman \quad y = n^3 - (n+2) \quad y = n^3 - n - 2$$

1	3
1-494	1-11-1



الف) $y = \frac{3n+1}{n-2}$
 $n=0 \Rightarrow -\frac{1}{p}$



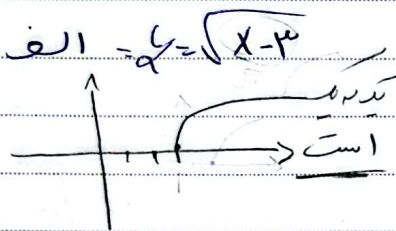
$n = \frac{3x+1}{x-2} \Rightarrow n(x-2) = 3x+1$

$x(n-3) = 1+2n$

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

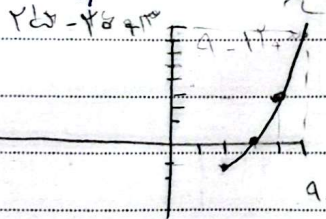
ب) $y = \frac{x+2}{x+2} \Rightarrow \frac{y(x+2)}{x+2} = y$

بدون حد



$n = \sqrt{y-3} \Rightarrow n^2 = y-3$
 $y = n^2 + 3$

ج) $y = n^2 - (n+3) \quad x \in [2, +\infty)$



$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{1 \pm \sqrt{1-4(1)(-3)}}{2(1)} = \frac{1 \pm \sqrt{13}}{2}$

n	y	x
0	-3	2
1	-4	3

$n = y^2 - (y+3) + 1 - 1$

$n = (y-2)^2 + 1$

$n+1 = (y-2)^2 + 1$

$y = 2 \pm \sqrt{n+1} \Rightarrow y = \sqrt{n+1} + 2$

$D = (0, +\infty)$

$f(x) = x + \sqrt{x} \quad f'(x) = 1 + \frac{1}{2\sqrt{x}}$

سوال 1:

$a+2b+c=? \quad f(n) \Rightarrow y + \sqrt{y} = n \Rightarrow y + \sqrt{y} + \frac{1}{p} = n + \frac{1}{p}$

$\sqrt{y} + \frac{1}{p} = \pm \sqrt{n + \frac{1}{p}} \Rightarrow \sqrt{y} = \pm \sqrt{n + \frac{1}{p}} - \frac{1}{p} \Rightarrow (\sqrt{y} + \frac{1}{p})^2 = n + \frac{1}{p}$

چون جملات را در دو طرف قرار می دهیم

$y = (\sqrt{n + \frac{1}{p}} - \frac{1}{p})^2 \Rightarrow \frac{1}{p} + n + \frac{1}{p} = \sqrt{n + \frac{1}{p}} \Rightarrow \frac{1}{p} + n + \sqrt{n + \frac{1}{p}} = a n + b \sqrt{x-c}$

$a+2b+c = 1 + 1 - 1 = 1$

$a=1 \quad b=\frac{1}{p} \quad c=-\frac{1}{p}$

Arman

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

$$n_1 = n_2 \Rightarrow \frac{n_1}{\sqrt{n_1^2 - 2}} = \frac{n_2}{\sqrt{n_2^2 - 2}} \rightarrow \frac{n_1^2}{n_1^2 - 2} = \frac{n_2^2}{n_2^2 - 2}$$

$$n_1^2 n_2^2 - 2 n_1^2 = n_2^2 n_1^2 - 2 n_2^2$$

$$n_1^2 (n_2^2 - 2) = n_2^2 (n_1^2 - 2) \rightarrow n_1^2 = n_2^2 \rightarrow n_1 = \pm n_2$$

$$y = \frac{x}{\sqrt{x^2 - 2}} \rightarrow n = \frac{y}{\sqrt{y^2 - 2}} \rightarrow n^2 = \frac{y^2}{y^2 - 2} \rightarrow n^2 (y^2 - 2) = y^2$$

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

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

$$y^2 = \frac{2 n^2}{n^2 - 1}$$

$$f^{-1}(x) = \frac{x}{1+|x|} \quad g(x) = \sqrt{x-1}$$

$$Df = Rf^{-1}$$

$$f\left(-\frac{1}{a}\right) + g\left(-\frac{1}{a}\right)$$

$$Dg = Rg \quad g(x) = \sqrt{x-1} = \left[\frac{x-1}{2}\right]^{\frac{1}{2}}$$

$$\sqrt{x} = \frac{y}{\omega} \rightarrow n = \frac{y}{\omega}$$

$$f^{-1}(x) = \frac{x}{1+|x|} = -\frac{y}{\omega} \rightarrow \omega n = y + y|x|$$

$$\omega n = y + y|x| \rightarrow -\omega n = y + y|x| \rightarrow n = -\frac{y}{\omega}$$

$$\frac{y}{\omega} = \frac{x}{1+|x|}$$

$$\frac{y}{\omega} = \frac{x}{1+|x|} \rightarrow \frac{y}{\omega} = \frac{x}{1+|x|} \rightarrow \frac{y}{\omega} = \frac{x}{1+|x|}$$

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

$$g^{-1}(12) = ? \quad g = \sqrt{x-1} \rightarrow n = \sqrt{x-1} \rightarrow n^2 + 1 = x$$

$$g(n) = n^2 + 1 + \sqrt{n^2 + 1} \rightarrow n^2 + 1 + \sqrt{n^2 + 1} = 12$$

$$Dg = Rg$$

$$n^2 + \sqrt{n^2 + 1} = 11$$

$$n = 2 \rightarrow g(12) = 12$$

Arman