

الف) $\{(-1, 2), (m, 2), (2, n), (2, n-1), (a, 1), (a+2, n), (m, 2)\}$

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

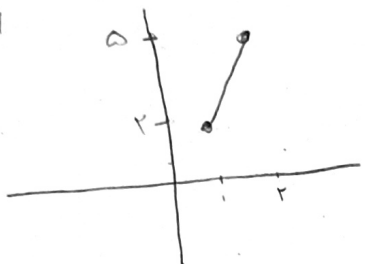
$n = 2$ ✓
 $n = -1$ ✗

$m = 2$ $n = 2$

$a = -1$

1

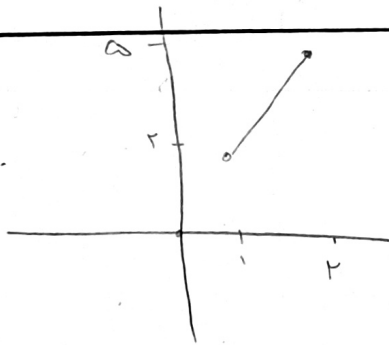
$f(x) = \begin{cases} x-1 & x \geq 1 \\ x+a & x < 1 \end{cases}$



$1+a \leq 2$
 $a \leq 1$

2

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



$a > 0$

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

3

الف) $y = \sqrt[3]{x+2}$

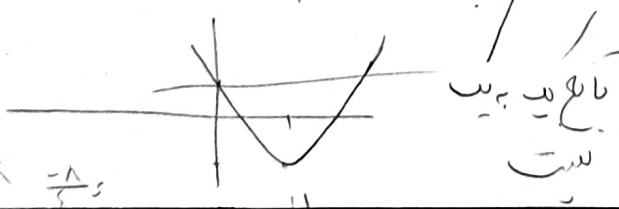
$\Rightarrow x = y^3 + 2 \Rightarrow x-2 = y^3 \Rightarrow \sqrt[3]{x-2} = y$



ب) $y = x^2 - 8x + 2$

$\frac{k}{2} = 2$

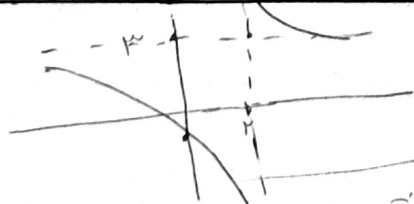
$17 - 8(1)(2) = k \Rightarrow k = 1$



تابع زوج است

4

الف) $y = \frac{x+1}{n-2}$



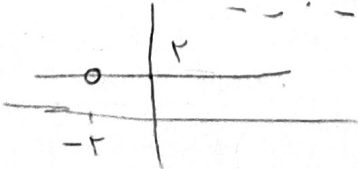
$x = \frac{y+1}{y-2} \Rightarrow xy - 2x = y + 1$

$xy - 2y = 2m + 1$

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

$y = \frac{2m+1}{n-2}$

ب) $y = \frac{k+2m}{n+2} = \frac{2(2m+1)}{n+2}$



5

$$y = \sqrt{x-4}$$

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

$$f^{-1}(u)$$

$$y = x^r + r$$

$$f = x^r - \{x + 1\}^k \quad x \in [r, +\infty)$$

$$y = m^T - \varepsilon m + \frac{m^2}{r} + 1 - 1$$

$$y = (x - 4)^2 - 1$$

$$y = 1 + \sqrt{x+1}$$

$$\zeta = \gamma \pm \sqrt{\gamma + 1}$$

$$C = \pm \sqrt{y' + 1} = x - 1$$

$$f(x) = x + \sqrt{x} + \frac{1}{x} - \frac{1}{x} \Rightarrow f(x) = \left(\sqrt{x} + \frac{1}{\sqrt{x}}\right)^2 - \frac{1}{x}$$

$$\Rightarrow x_4 = \left(\sqrt{y} + \frac{1}{\sqrt{y}}\right)^2 - \frac{1}{2} \Rightarrow \sqrt{x + \frac{1}{2}} = \sqrt{y} + \frac{1}{\sqrt{y}}$$

$$= 2\sqrt{x + \frac{1}{x}} - \frac{1}{x} = \sqrt{y} \Rightarrow \left(\sqrt{x + \frac{1}{x}} - \frac{1}{x}\right)' = y$$

$$x + \frac{1}{x} - \sqrt{x + \frac{1}{x}} + \frac{1}{x} = y \quad \Rightarrow \quad x + \frac{1}{x} - \sqrt{x + \frac{1}{x}} \rightarrow a + b + c = 1 + 1 + 1 = 3$$

$$y = \frac{a}{\sqrt{x^2 - r^2}} \xrightarrow[\frac{1}{x_1^2 - r^2}]{\frac{1}{x_1^2 - r^2}} \frac{x_1^r}{x_1^r - r} = \frac{x_1^r}{x_1^r - r} \Rightarrow \cancel{x_1^r} - \cancel{x_1^r} = \cancel{x_1^r} - \cancel{x_1^r} \Rightarrow \cancel{x_1^r} = \cancel{x_1^r} \Rightarrow x_1 = \pm x_1$$

$$n_1^T = n_T^T \Rightarrow n_1 = \pm n_T$$

یہ ی نجی خواندہ دقتوں مختلف ہیں ۱۰ دسٹہ بالسر بنیاد میں ابن شیعہ بالادریہ است

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

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

$$\left\{ \begin{array}{l} \text{if } \rightarrow y^+ \rightarrow \frac{x}{1-x} = \frac{1-x}{y} \\ \text{if } \rightarrow y^- \rightarrow \frac{x}{1+x} = y \end{array} \right.$$

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

$$f\left(-\frac{r}{s}\right) + g^{-1}\left(-\frac{r}{s}\right) = \frac{\frac{r}{s}}{\frac{1}{s}} + \left(\frac{r}{s}\right)^2 = \frac{-\frac{r}{s}}{\frac{1}{s}} + \frac{r}{s} = -\frac{r}{r} + \frac{r}{s} = \frac{-r}{s}$$

$$f^{-1}(x) = \sqrt[r]{x-1} \Rightarrow y = \sqrt[r]{x-1} \stackrel{f(x)}{\Rightarrow} x = \sqrt[r]{y-1} \stackrel{f(y)}{\Rightarrow} y = \sqrt[r]{x-1} \Rightarrow y+1 = x$$

$$g(n) = f(n) + \sqrt{f(n)} \Rightarrow y = x^{\frac{1}{n}} + 1 + \sqrt{x^{\frac{1}{n}} + 1} \Rightarrow x^{\frac{1}{n}} + 1 + \sqrt{x^{\frac{1}{n}} + 1} = 15$$

$$t + \sqrt{t-1} = 1 \Rightarrow (\sqrt{t} + 1)(\sqrt{t} - 1) = 0$$

$$\sqrt{n+1} = \mu \rightarrow n+1 = 9 \rightarrow \boxed{n=8}$$