

1A

کلیت 10

بزرگترین

الف) $f = \{(3, 2), (4, 3), (5, 4), (6, 5), (7, 6), (8, 7), (9, 8), (10, 9)\}$

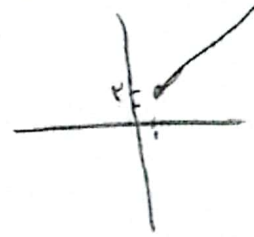
ب) $f = \{(1, 1), (2, 2), (3, 3), (4, 4), (5, 5), (6, 6), (7, 7), (8, 8), (9, 9), (10, 10)\}$

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

$m - 1 - 1 = 1 \Rightarrow m = 3$
 $a = -1$

$f(u) = \begin{cases} u-1; & u \geq 1 \\ u+a; & u < 1 \end{cases} \Rightarrow D_f = [1, \infty) \cup (-\infty, 1)$

$1+a = 1 \Rightarrow a = 0$



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

$a-1 < 0 \Rightarrow a < 1$
 $a > 0$
 $(0, 1)$

الف) $y = x^2 + 2 \Rightarrow x^2 + 2 = x^2 + 2 \Rightarrow x^2 = x^2 \Rightarrow x = x$

ب) $x^2 = y - 2 \Rightarrow x = \sqrt{y-2} \Rightarrow y = x^2 + 2$

ج) $y = x^2 - 2x + 2 \Rightarrow y = x^2 - 2x + 2 \Rightarrow y = x^2 - 2x + 2$

$a = 2$



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

$\Rightarrow \partial x_1 - \partial x_2 = 0 \Rightarrow \partial x_1 = \partial x_2 \Rightarrow x_1 = x_2$

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

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

Sol 1) $y = \sqrt{u - k} \rightarrow \sqrt{u_1 - k} = \sqrt{u + k} \xrightarrow{\text{RHS}}$ $u_1 - k = u + k \rightarrow u_1 = u + 2k$ 7
 $y^2 = u - k \rightarrow u = y^2 + k \rightarrow y = \sqrt{u - k}$ ✓

$y = n^2 - 9n + 14$, $n \in [19; +\infty)$ $\rightarrow$ $\frac{b}{4a} = \frac{-(-9)}{2} = 4.5 \rightarrow -1$
 $y = n^2 - 9n + 14 + 1 \rightarrow y = n^2 - 9n + 15 \rightarrow y = (n-4.5)^2 - 1$
 $n - 4.5 = \pm \sqrt{y+1} \rightarrow n = 4.5 \pm \sqrt{y+1}$ $y = 4.5 \pm \sqrt{n+1}$

$f(u) = u + \sqrt{u}$ ab $(0, +\infty) \rightarrow f^{-1}(u) = a + b - \sqrt{u - c}$ $1 + \frac{1}{x} = \frac{1}{x} + \frac{1}{x}$ (1) (2)
 $a + \sqrt{b + \epsilon} \leq ? \rightarrow u = y + \sqrt{y} \rightarrow \frac{1}{\epsilon} + u = y + \sqrt{y} + \frac{1}{\epsilon}$
 $\rightarrow u + \frac{1}{\epsilon} = (\sqrt{y} + \frac{1}{\sqrt{\epsilon}})^2 \rightarrow \sqrt{y} + \frac{1}{\sqrt{\epsilon}} = \sqrt{u + \frac{1}{\epsilon}} \rightarrow \sqrt{y} = \sqrt{u + \frac{1}{\epsilon}} - \frac{1}{\sqrt{\epsilon}}$
 $y = u + \frac{1}{\epsilon} - \sqrt{u + \frac{1}{\epsilon}}$ $a + \sqrt{b + \epsilon} \leq ? \rightarrow a + b - \sqrt{u - c} \rightarrow a = 1$ $b = \frac{1}{\epsilon}$ $c = -\frac{1}{\epsilon}$

صم على الله

$y = \frac{n}{\sqrt{n^2 - 1}} \rightarrow \frac{n_1}{\sqrt{n_1^2 - 1}} = \frac{n_2}{\sqrt{n_2^2 - 1}} \rightarrow \frac{n_1^2}{n_1^2 - 1} = \frac{n_2^2}{n_2^2 - 1}$ (رابطه ۱، ۵)
 $n_1^2 n_2^2 - 1 n_1^2 = n_1^2 n_2^2 - 1 n_2^2 \rightarrow n_1^2 = n_2^2 \rightarrow n_1 = \pm n_2$ (غیر قابل قبول)
 $y = \frac{n}{\sqrt{n^2 - 1}} \rightarrow y \sqrt{n^2 - 1} = n \rightarrow n^2 (y^2 - 1) = y^2 n^2$
 $n^2 = \frac{y^2 n^2}{y^2 - 1} \rightarrow n = \pm \sqrt{\frac{y^2 n^2}{y^2 - 1}} \rightarrow y = \pm \sqrt{\frac{y^2 n^2}{n^2 - 1}}$ (غیر قابل قبول)
 پس بجای نویسی معلومش کن
 وقت نوشتن یک دو سه ننویس

$f^{-1}(u) = \frac{u}{1+|u|} \Rightarrow g(u) = \sqrt{u} - 1 \quad f(-\frac{r}{\delta}) + g^{-1}(-\frac{r}{\delta}) = ?$

$y + g(u) = u \rightarrow u(y-1) = -y \rightarrow u = -\frac{y}{y-1} \rightarrow y = \frac{-u}{u-1}$

$\frac{-\frac{r}{\delta}}{a} = \frac{-(-\frac{r}{\delta})}{-\frac{r}{\delta} - 1} \Rightarrow \frac{\frac{r}{\delta}}{-\frac{r}{\delta}} \Rightarrow -1$

$\frac{-\frac{r}{\delta}}{a} \rightarrow a = \frac{r}{\frac{r}{\delta}} = \delta$

$(-\frac{r}{\delta} + 1)^r = (\frac{r}{\delta})^r = \frac{r}{\delta}$

$\sqrt{u} = y + 1 \rightarrow u = (y+1)^2 \rightarrow y = (\sqrt{u} - 1)^2$

$-\frac{r}{\delta} + \frac{r}{\sqrt{\delta}} = \frac{-\delta + r\sqrt{\delta}}{\sqrt{\delta}} = \frac{r\sqrt{\delta} - \delta}{\sqrt{\delta}}$

$f^{-1}(x) = \sqrt[n-1]{x} \Rightarrow g(x) = f(x) + \sqrt[n]{f(x)} \quad g^{-1}(17) = ?$
 $y = \sqrt[n-1]{x-1} \Rightarrow y^n = x-1 \Rightarrow x = y^n + 1 \Rightarrow y = \sqrt[n]{x+1} \Rightarrow g(x) = x^{\frac{n-1}{n}} + \sqrt[n]{x^{\frac{n-1}{n}} + 1}$
 $x^{\frac{n-1}{n}} + \sqrt[n]{x^{\frac{n-1}{n}} + 1} = 17 \rightarrow 2 \checkmark$
 $x^{\frac{n-1}{n}} + 1 + \sqrt[n]{x^{\frac{n-1}{n}} + 1} = 17 \checkmark$