

$$y = \sqrt{\frac{r+n}{n+b}} + a$$

$(r, +\infty)$

فقدت في (ج) ا، ب

$$r+a=0$$

$$a=-r$$

$$\frac{r+n+r+a(n+b)}{n+b} = \frac{r+n+r+an+ab}{n+b} = \frac{r(r+a)+r+ab}{n+b}$$

$$a+b=0 \xrightarrow{n=r} r+b=0$$

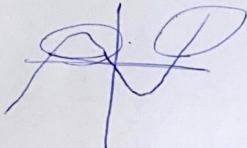
$$b=-r$$

(r) 5

$$\text{الف) } y = \sqrt{n-n}$$

$$n^2-n \geq 0$$

$$n(n-1) \geq 0 \rightarrow n(n-1)(n+1) \geq 0$$



$$D_f = [-1, 0] \cup [1, +\infty)$$

$$\text{ب) } y = \frac{1}{\sqrt{|n|-1}}$$

$$\sqrt{|n|-1} > 0 \rightarrow |n| > 1 \rightarrow n > 1$$

$$D = (-\infty, -1) \cup (1, +\infty)$$

(r) 6

$$\text{الف) } y = \sqrt{\frac{1}{|n|-a}}$$

$$|n| \neq [a]$$

$$D_f = \mathbb{R} \setminus [a]$$

$$\text{ب) } \sqrt{a} + \sqrt{b} = 9$$

$$\sqrt{b} = 9 - \sqrt{a}$$

$$a \leq 9$$

$$\sqrt{a} \geq 0$$

$$9 - \sqrt{a} \geq 0$$

$$9 \geq \sqrt{a} \rightarrow 81 \geq a$$

$$a \geq 0 \rightarrow D_f = [0, 81]$$

(r) 7

$$y = \frac{1}{[rn - \frac{1}{r}] + [rn + \frac{r}{r}]}$$

$$[rn - \frac{1}{r}] + [rn + \frac{r}{r}] + r > 0$$

$$r[rn - \frac{1}{r}] > -r \rightarrow [rn - \frac{1}{r}] > -1$$

$$rn - \frac{1}{r} \geq 0 \rightarrow rn \geq \frac{1}{r} \rightarrow n \geq \frac{1}{r^2} \rightarrow D_f = [\frac{1}{r^2}, +\infty)$$

(r) 8

$$y = \sqrt{1 - \log(rn-a)}$$

$$rn-a \geq 0 \rightarrow rn \geq a \rightarrow n \geq \frac{a}{r}$$

$$rn-a \leq 10 \rightarrow n \leq \frac{10+a}{r}$$

$$\frac{a}{r} \leq n \leq \frac{10+a}{r}$$

$$C-b=9$$

$$1 - \log(rn-a) > 0$$

$$\log(rn-a) < 1$$

$$C-b = \frac{10+a}{r} - \frac{a}{r} = \frac{10}{r} = 9$$

(r) 9

در مسائل (ب) دو اندام سه شنبه (ب)

۲۰

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

تابع هست

(۱)

$$\begin{aligned} y_1^3 &= 2x^2 + 2x - 1 \\ y_2^3 &= 2x^2 + 2x - 1 \end{aligned} \Rightarrow y_1^3 = y_2^3 \Rightarrow y_1 = y_2$$

(۲)

$\frac{1}{n} \cos y = y \cos x \xrightarrow{\frac{1}{n} \cos y = \frac{1}{n} \cos x} \frac{1}{n} \cos y = \frac{1}{n} \cos x$ تابع نیست

ج) $\frac{x+y}{r} = \sqrt{xy}$

$xy > 0 \rightarrow x+y - 2\sqrt{xy} = 0 \rightarrow (\sqrt{x}-\sqrt{y})^2 = 0 \rightarrow \sqrt{x} = \sqrt{y} \rightarrow x=y$ تابع هست

د) $xy^2 + 2x - y^3 - 2y = 0 \rightarrow x(y^2+2) - y(y^2+2) = 0$

$(y^2+2)(x-y) = 0 \rightarrow x=y$ تابع هست

$f(x) = \begin{cases} 2x^2 - 6 & |x-1| \geq 2 \\ a+2x & 0 \leq x \leq 2 \end{cases}$

$x-1 \geq 2 \rightarrow x \geq 3 \rightarrow 2x^2 - 6$
 $x-1 \leq -2 \rightarrow x \leq -1 \rightarrow 2x^2 - 6$

(۳)

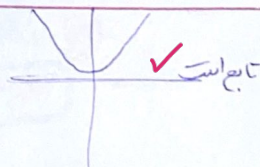
$f(x) = \begin{cases} 2x^2 - 6 & x \geq 3 \\ a+2x & 0 \leq x \leq 2 \\ 2x^2 - 6 & x \leq -1 \end{cases}$

$x=3 \rightarrow a-6 = a+6$
 $a+b=12$

سوال ۲

حواستون رو حبابه جاشن:

الف) $|y| + x^2 = xy \Rightarrow \begin{cases} y > 0 \rightarrow y = x^2 \\ y < 0 \rightarrow -y = x^2 \end{cases}$



سوال ۲

ب) $[y] + [2x] = 1$

$y = \frac{x^2}{r}$ غلط

$x=0,1 \rightarrow [x] = 0 \rightarrow [y] = 1 \rightarrow y \in [1,2]$ تابع نیست

$f(x) = \sqrt{a-bx-x^2}$ $D_f = [a,b]$ $a \neq 0$ $b \in \mathbb{Z}$

$S = a+b = \frac{b}{a} = \frac{-(-b)}{-1} = -b$

$a+b = -b \rightarrow a = -2b \rightarrow a = -2(-1) = 2$

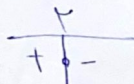
$P = ab = \frac{c}{a} = \frac{a}{-1} = -a$

$ab = -a \rightarrow b = -1$ $a+b = 2-1 = 1$

$y = \frac{2}{\sqrt{ax^2+bx+c}}$

$D_f = (-\infty, 2]$

$3a+c-2|b|$



$c = -2b$

اگر $a=0$ حواستون رو حبابه جاشن
داشته باشه تغییر علامت
نمود
به صورتی غیر منفی داره

$a=0 \rightarrow \sqrt{2b+c} > 0$

$2b+c=0$

$3a+c-2|b| = -2b+2b = 0$

$b \leq 0 \rightarrow -2|b| = +2b$