

تفاوتی که مشاهده کرد:

۴، ۵

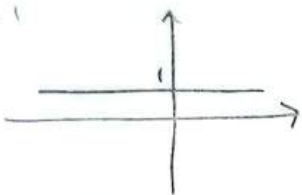
الف) $y^3 - x = 2x^2$ تابع است
 $x=1$
 $y^3 - 1 = 2(1)^2$
 $y^3 = 3$

ب) $y^3 + x^2 = x + 3$ تابع است
 $y=0$
 $0 + x^2 = x + 3$
 $x^2 - x - 3 = 0$
 $x = 3$
 $-y + 0 = 0 + 3$
 $y = -3$

ج) $\sqrt{x-4} + |y-2| = 0$ تابع است
 $\sqrt{x-4} = 0$
 $x = 4$
 $|y-2| = 0$
 $y = 2$
 $(4, 2) \rightarrow f(4) = 2$

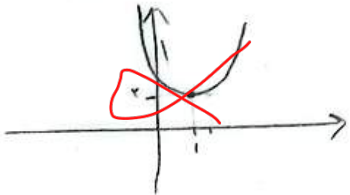
د) $x = \cos y$ تابع است
 $x = f(y) = \cos y$

الف) $y = 1x$
 $y = 1$



۱

ب)



۲

الف) $y = ax^2 + b \Rightarrow y = x$

$a=1$
 $b=0 \rightarrow a+2b = 1+2(0) = 1$

ب) $f(x) = x$ هانی $f(x) = x$ است پس

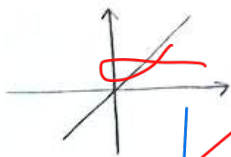
$as = \frac{b}{2a} = -\frac{a}{2} = 2 \rightarrow a = -4$

$a+2b = -4+2(0) = -4$

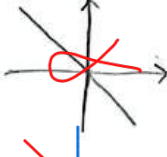
$ys = 1 \rightarrow 2(2) + b = 1 \Rightarrow b = -3$

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الف) $y = 2x+1$



ب) $y = -3x+1$



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ج) $y = x^2$

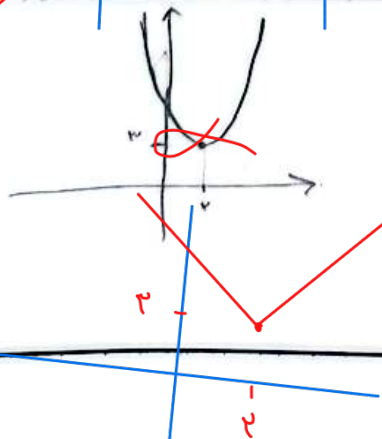


د) $y = x^3$



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الف)



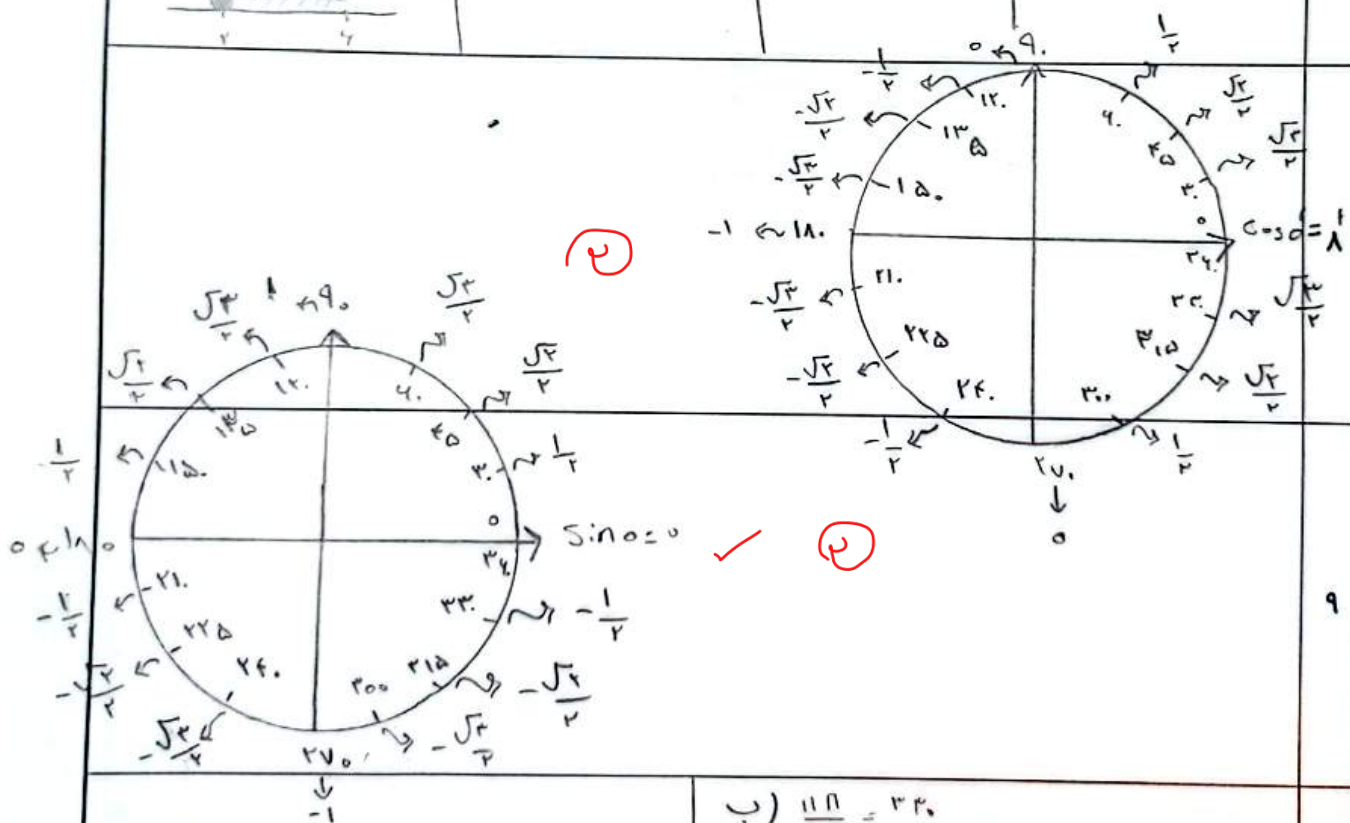
ب)



۵

$\text{a)} \quad n^r - r n > 0$ $n(n-r) > 0$ $n < 0$ $r > n$ $D_p = (0, +\infty)$	$\text{b)} \quad \frac{n+r}{n^r - r n + 1} > 0$ $n^r - r n + 1 > 0$ 0	$\text{c)} \quad \frac{n+r}{n^r + r n + 1} > 0$ $n^r + r n + 1 > 0$ $n(n+r+1) > 0$	$\text{d)} \quad \frac{n+r}{n^r - r n^r}$ $r, -r, 15 \geq \sum_{i=1}^n$ $+\frac{1}{r} - \frac{1}{r} + \frac{1}{r} -$ $D_p = (-\infty, -r) \cup (r, 15]$	6
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$\text{a)} \quad 4 - n > 0 \Rightarrow$ $n < 4$ $n, r > 0 \Rightarrow$ $n > r$ $D_p = [r, 4]$ 	$\text{b)} \quad n^r + 1 > 0$ $n^r > -1$ $n > -1$ $D_p = (-1, +\infty)$ $1/2$	$\text{c)} \quad n - r > 0$ $n > r$ $D_p = (r, +\infty)$	$\text{d)} \quad n + n^r > 0$ $ n + n^r \neq 0$ $ n + n^r > 0$ $ n > n^r$ $D_p = \{\emptyset\}$	7
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$\text{a)} \quad \frac{r n}{r} = 110$ $\cos 110^\circ = -\frac{1}{r} \Rightarrow \frac{1}{r}$ $\sin = \frac{8n}{4}, \frac{n}{4} \text{ (satisfies)}$	$\text{b)} \quad \frac{11n}{4} = 110$ $\cos 110^\circ = \frac{\sqrt{r}}{r} \Rightarrow -\frac{\sqrt{r}}{r}$ $\sin = \frac{8n}{r}, \frac{r n}{r} \text{ (satisfies)}$	10
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۱- الف، رابطه تابع است، راز تعریف ریاضی داریم:

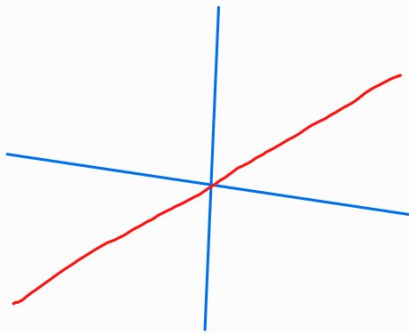
$$\begin{aligned} y_1^2 &= 2x_1^2 + x_1 \\ y_2^2 &= 2x_2^2 + x_2 \end{aligned} \xrightarrow{x_1 = x_2 = x} \begin{aligned} y_1^2 &= 2x^2 + x \\ y_2^2 &= 2x^2 + x \end{aligned} \rightarrow y_1^2 = y_2^2 \rightarrow y_1 = y_2 \quad \text{تابع است}$$

$$x = C \cdot y$$

۲ مثال نقض

$$x=0 \rightarrow C \cdot y=0 \rightarrow y = \frac{x}{C}, \frac{\sqrt{x}}{C}$$

تابع نیست



$$y = ax + b \quad \begin{array}{c} a=2 \\ 1 \\ 2 \end{array} \rightarrow 2 = 2(1) + b \rightarrow b=0$$

$$y = 2x$$

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

$$x^2-4x \neq 0 \rightarrow x(x-4) \neq 0 \rightarrow D_f = \mathbb{R} - \{0, 4\}$$

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

$$x^2-4x+4 \neq 0 \rightarrow \Delta = (-4)^2 - 4(4) < 0 \rightarrow D_f = \mathbb{R}$$

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

$$x^2+x+4 \neq 0 \rightarrow \Delta = (1)^2 - 4(4) < 0 \rightarrow D_f = \mathbb{R}$$

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

$$x^4-4x^2 \neq 0 \rightarrow x^2(x^2-4) \neq 0 \rightarrow D_f = \mathbb{R} - \{\pm 2, 0\}$$

$$y = \frac{r_{n+1}}{r_{n+1}}$$

$$1 \leq -V$$

$$r_{n+1} \neq 0 \rightarrow r_n \neq -1$$

$$D_f = \mathbb{R}$$

$$y = \frac{\sqrt{x-r}}{x-r} \rightarrow x \geq r$$

$$x-r \rightarrow x \neq r$$

$$\mathbb{C}$$

$$D_f = [r, +\infty) - \{r\}$$

$$\mathbb{R} - \{0\}$$

$$\mathbb{Q}$$