

14, 17, 18

سوال 1

روش اول

الف) $y^k - x = 2x^2$

اگر $x=0 \Rightarrow y^k = 0$
 $y \leq \sqrt[k]{k}$

$$\left\{ \begin{array}{l} y^k = 2x^2 + x \\ y^k = 2x_1^2 + x_1 \\ y^k = 2x_2^2 + x_2 \end{array} \right\} \Rightarrow y_1^k = y_2^k \checkmark$$

$y_1 = y_2$

ب) $|y| + x^2 = x + k$

اگر $x=1 \Rightarrow |y| = k$
 $y < -k$

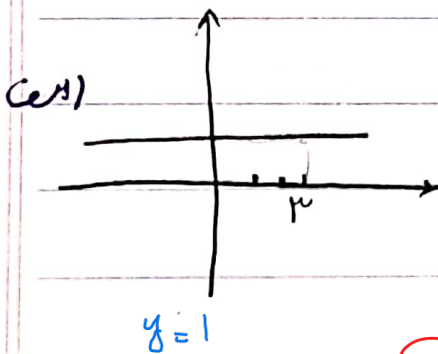
ج) $\sqrt{x-E} + |y-x| \leq 0$

اگر $x=f \Rightarrow |y-x| \leq 0$
 $y-x=0$
 $y=x$

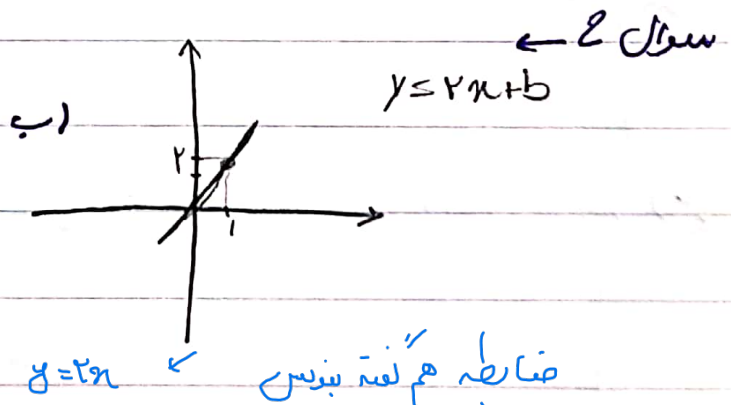
د) ✓

د) $x = \cos y$

اگر $x=0 \Rightarrow \cos y = 0$ $y = \frac{\pi}{2}$
 $y = \frac{\pi}{2}$



(1)



← 3 سوال

الف) $y = an + b$
 $y = x \Rightarrow a = 1, b = 0 \Rightarrow a + rb = 1 + 0 = 1$

ب) $y = x^r + an + b$
 $\min |r| \Rightarrow \begin{cases} -\frac{b}{ra} = \frac{r}{1} \rightarrow -b = \epsilon a \rightarrow \epsilon a + b = 0 \\ -ra + b = -r \end{cases} \quad (1)$
 $a_5 = -\frac{b}{ra} = -\frac{a}{r} = r \Rightarrow a = -r$
 $y_5 = 1 \rightarrow (r)^r - r(r) + b = 1 \Rightarrow b = 6$
 $a + rb = -r + r(6) = 5$

$\Rightarrow \begin{cases} \epsilon a + b = 0 \\ ra + b = -r \\ \hline ra = r \\ a = \frac{r}{r} \end{cases}$
 $x(\frac{r}{r}) + b = -r$
 $r + b = -r$
 $b = -2r$

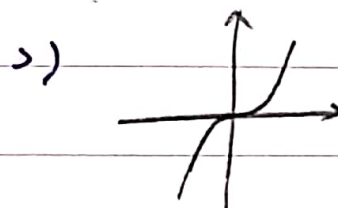
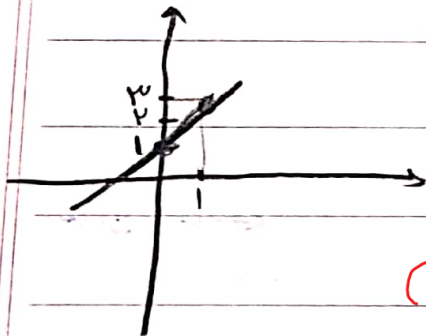
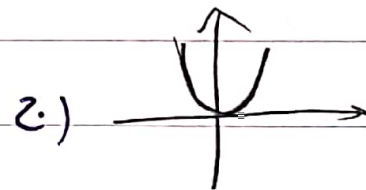
$\Rightarrow a + rb = \frac{r}{r} + r(-2) = \frac{r}{r} + (-2r) = \frac{r - 2r}{r} = \frac{-r}{r} = -1 \neq 0$

 $y = x + 1$

← 4 سوال

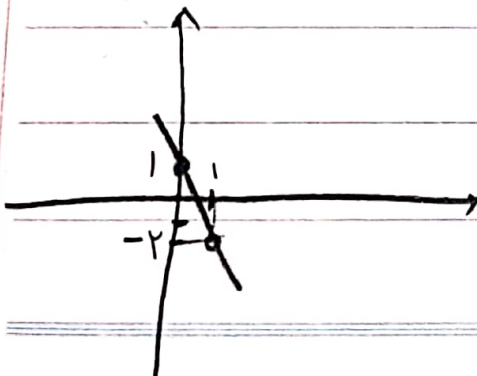
الف) $y = rx + 1 \rightarrow$

x	0	1
y	1	r



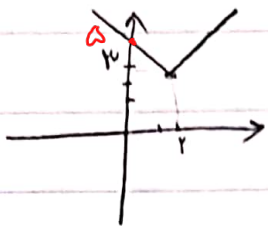
ب) $y = -rx + 1 \rightarrow$

x	0	1
y	1	-r



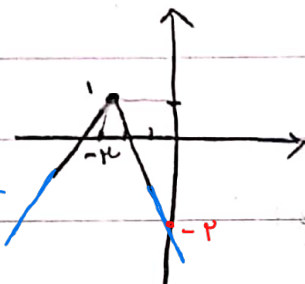
تذکره

الف) $y = |x-2| + 3 \rightarrow$



← سوال 5

ب) $y = -|x+3| + 1$

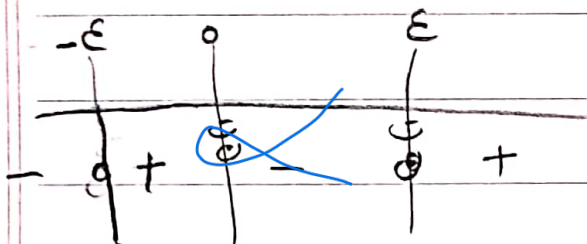


← عرض از مبدأ توجه شود.

1, 1, 5

← سوال 6

الف) $\frac{x+E}{x^2-Ex} \rightarrow \begin{cases} x+E=0 \\ x=-E \end{cases} \quad \begin{cases} x^2-Ex=0 \\ x(x-E)=0 \end{cases}$
 $\begin{cases} x=0, x-E=0 \\ x=E \end{cases}$



$D_f = \mathbb{R} - \{0, E\}$

ب) $\frac{x+E}{x^2-Vx+19} = D_f = \mathbb{R}$

$x^2-Vx+19$

مشتق Δ

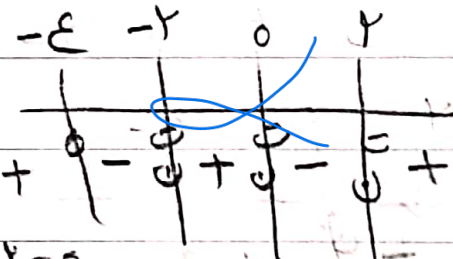
1, 1, 5

نقش علامت چرا؟
 فقط خارج مخالف صفر باید باشد ✓

ج) $\frac{x+E}{x^2+x+E} = D_f = \mathbb{R}$

x^2+x+E

مشتق Δ



$D_f = \mathbb{R} - \{0, -2, 2\}$

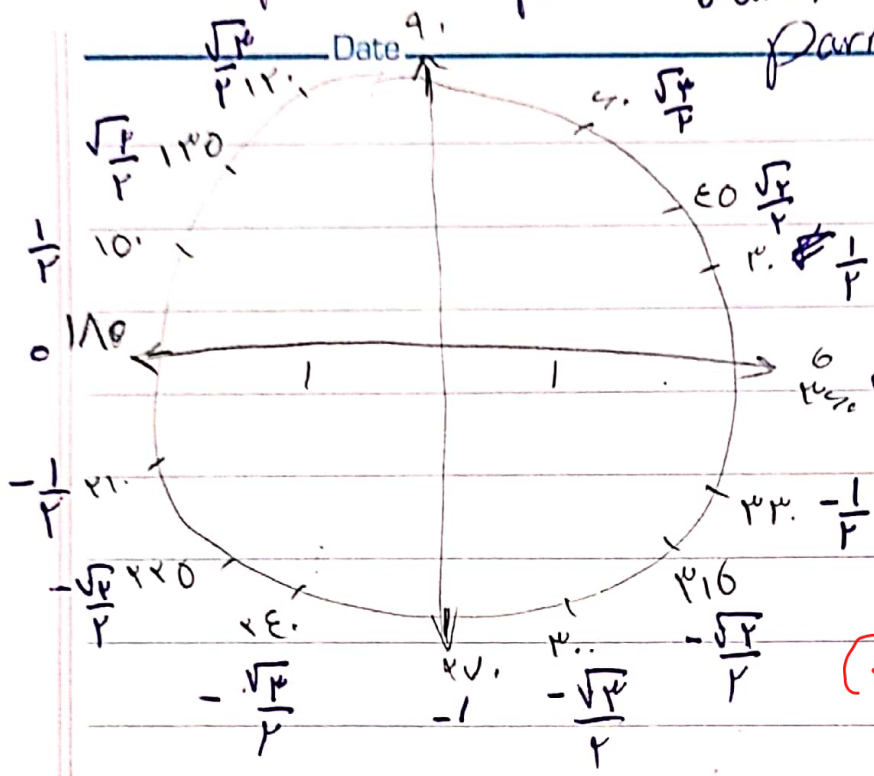
د) $\frac{x+E}{x^2-Ex^2} \rightarrow$

$\begin{cases} x+E=0 \\ x=-E \end{cases} \quad \begin{cases} x^2-Ex^2=0 \\ x(x^2-E)=0 \end{cases}$

$x^2-E=0, x^2-E=0$

$x^2=E$

$x=\pm\sqrt{E}$



← سوال 9
 جواب ←

Parnika
 Parnika

(✓) ✓

(a) $-\cos \frac{\pi}{6} = \frac{1}{2} \rightarrow \theta = \frac{\pi}{6}$
 $150^\circ \leq \omega \pi$

(b) $-\cos \frac{11\pi}{6} = -\frac{\sqrt{3}}{2} \rightarrow \theta = \frac{5\pi}{6}$
 $300^\circ \leq \omega \pi$

(✓) ✓

← Volume

$$\cos y = \sqrt{4-x} + \sqrt{x-2}$$

$$\begin{matrix} 4-x \geq 0 \\ x \geq 2 \end{matrix}$$

$$\begin{matrix} x-2 \geq 0 \\ x \geq 2 \end{matrix} \rightarrow D_f = [2, 4]$$

$$b) y = \frac{4x+1}{x^2+1} \Rightarrow D_f = \mathbb{R}$$

$$c) \frac{\sqrt{x-2}}{x-5} \rightarrow \begin{matrix} x-2 \geq 0 \\ x \geq 2 \end{matrix} \quad \begin{matrix} x-5=0 \\ (x=5) \end{matrix}$$

$$D_f = \mathbb{R} - \{(-\infty, 2), 5\}$$

$$d) y = \frac{2x+3}{|x|+x^2} \rightarrow D_f = \mathbb{R} \quad \mathbb{R} - \{0\}$$

$$\frac{|x|+x^2}{x^2+x^2}$$

