

تابعی از ضریب - هم درجه C - دیکسی شماره ۲
 $y^3 - x = 2x^2 \rightarrow \begin{cases} y_1^3 = 2x_1^2 + x_1 \\ y_2^3 = 2x_2^2 + x_2 \end{cases} \xrightarrow{x_1 = x_2} y_1^3 = y_2^3 \rightarrow y_1 = y_2$ تابع است
 $y^3 = 2x^2 + x$

تابع نیست
 $|y| + x^2 = x + 3 \rightarrow x \geq 1$
 $|y| + 1 = 4$
 $|y| = 3 \rightarrow y = \pm 3$

تابع است $\rightarrow$ دو مقدار همیشگی مثبت و همیشگی منفی شده
 $\sqrt{x-4} + |y-2| = 0 \rightarrow \sqrt{x-4} = 0 \rightarrow x = 4 \quad y-2 = 0 \rightarrow y = 2$
 $(4, 2)$

تابع نیست
 $x = \cos y \rightarrow x \leq 1$
 $x = 0 \rightarrow \frac{\pi}{2}, \frac{3\pi}{2}$

الف) تابع ثابت $y=x$ لذا از نقطه ۱
 $f(x) = 1$

$f(x) = x$

ب) تابع خطی لذا از نقطه ۱ با شیب واحد
 $y = ax + b$
 $y = x(1) + b \rightarrow b = 0$



الف) ۱
 $a + b = 1 + 0 = 1$
 $y = ax + b$
 $y = x$

ب) اگر درجه ۲
 $y = x^2 + ax + b$

$x = \frac{-b}{2a} \rightarrow x = \frac{-b}{2a} \Rightarrow a = \frac{-b}{2}$

$1 = f - \frac{b}{2} + b$

$1 = f - \frac{b}{2} + \frac{2b}{2}$

$1 - f = \frac{b}{2}$

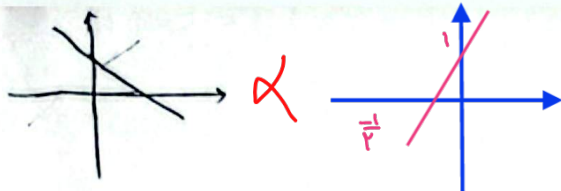
$-3 = \frac{b}{2} \rightarrow b = -6$

پس صفت ۱

$a = \frac{4}{2} \rightarrow a + b = 2 - 6 = -4$
 $b = -4$

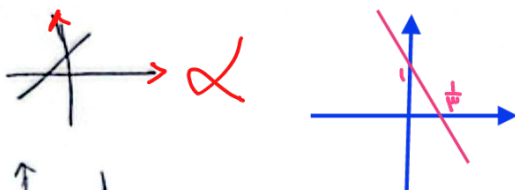
$\frac{4}{2} - \frac{6}{2} = -1$

الف) $y = 2x + 1$

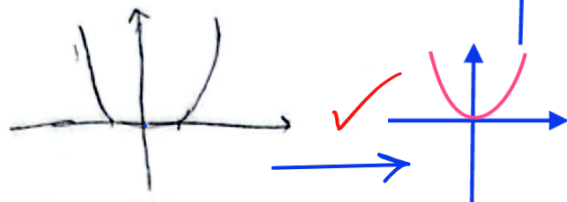


-2
1

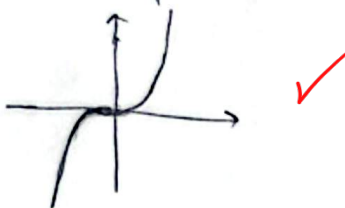
ب) $y = -3x + 1$



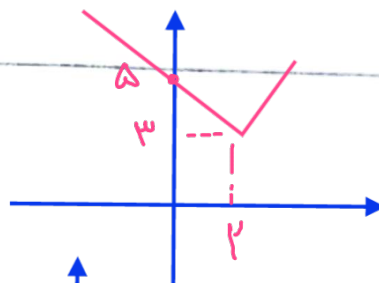
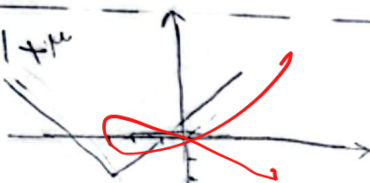
ج) $y = x^2$



د) $y = x^3$



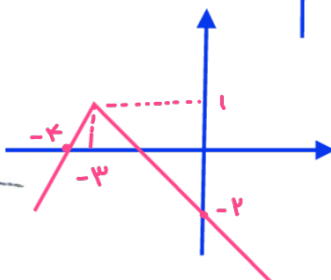
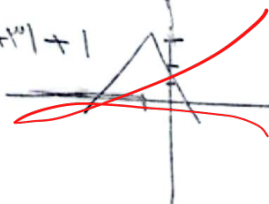
الف) $y = |x - 2| + 3$



الف)

0

ب) $y = -|x + 3| + 1$



الف) $y = \frac{x + 4}{x^2 - 4x} \rightarrow D_f = \mathbb{R} - \{0, 4\}$

-2
2

ب) $y = \frac{x + 4}{x^2 - 11x + 14} \rightarrow \Delta < 0 \rightarrow \lim_{x \rightarrow \infty} y = D_f = \mathbb{R}$

ج) $y = \frac{x + 4}{x^2 + x + 4} \rightarrow D_f = \mathbb{R}$

د) $y = \frac{x + 4}{x^2 - 4x^2} \Rightarrow D_f = \mathbb{R} - \{-4, 0, 4\}$
 $x^2(x^2 - 4) = x^2(x - 2)(x + 2)$

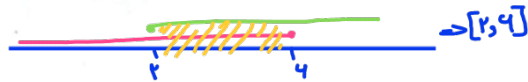
الف) $y = \sqrt{4-x} + \sqrt{x-2} \rightarrow D = (-\infty, 4] \cup (-\infty, 2]$

$4-x \geq 0$

$x-2 \geq 0$

$4 \geq x$

$x \geq 2$



1

$(-\infty, 4]$

~~$(-\infty, 2]$~~ $[2, \infty+)$

ب) $y = \frac{4x+1}{x^2+1} \rightarrow D = \mathbb{R}$

خرج امسا مفرق

ج) $y = \frac{\sqrt{x-2}}{x-4} = D_f = [2, 4) \cup (4, \infty)$

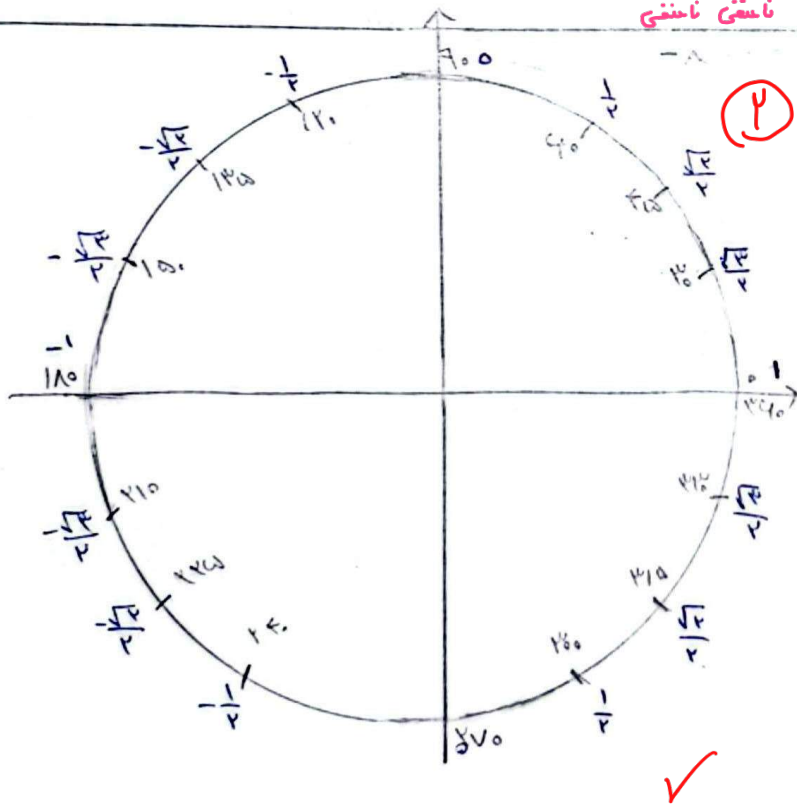
$x-2 \geq 0 \rightarrow x \geq 2$

$x-4 \neq 0 \rightarrow x \neq 4$

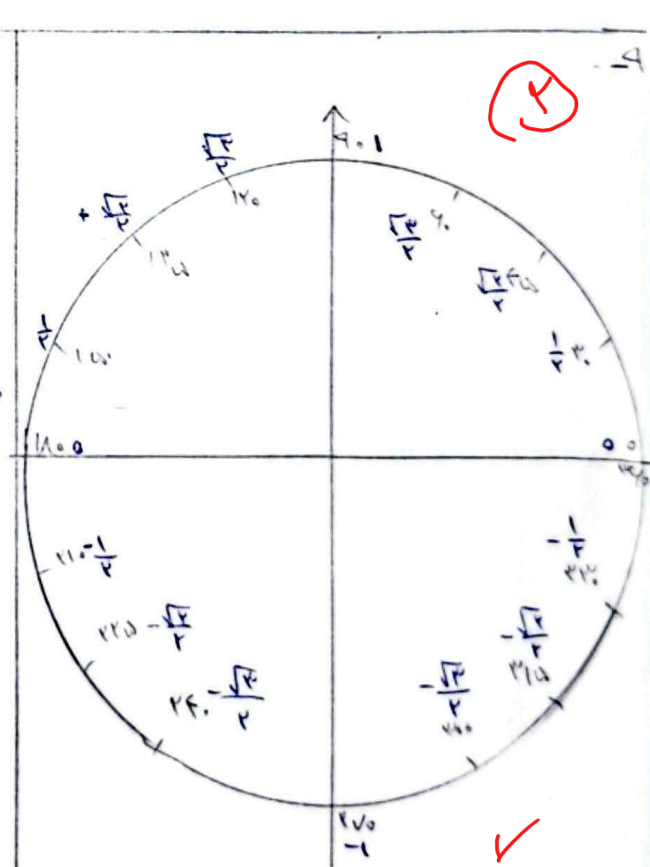
$y = \frac{2x+3}{|x|+x^2}$

$|x|+x^2 \neq 0 \rightarrow x^2 \neq -|x| \rightarrow \cancel{D = \mathbb{R}^+}$ $|x|+x^2 \neq 0 \rightarrow x \neq 0 \rightarrow D_y = \mathbb{R} - \{0\}$

ناقصي ناقصي



2



3

١٥ - ٢

الف) قدره كسريون $\frac{12}{3}$ سنو لنعام راديفاجه ب رايان ؟ $\frac{12}{4}$, $\frac{512}{4}$ ✓

ب) قدره كسريون $\frac{112}{4}$ سنو لنعام راديفاجه ب رايان $\frac{412}{3}$, $\frac{512}{4}$ ✓

$$\rightarrow y = x^r + ax + b \quad \min \int_1^r \Rightarrow x_s = r, y_s = 1$$

$$\left. \begin{array}{l} x_s = -\frac{b}{ra} \rightarrow -\frac{a}{r} = r \Rightarrow a = -r \\ y_s = 1 \rightarrow 1 = (r)^r - r(r) + b \Rightarrow b = a \end{array} \right\} a + rb = -r + r(a) = \underline{\underline{9}}$$