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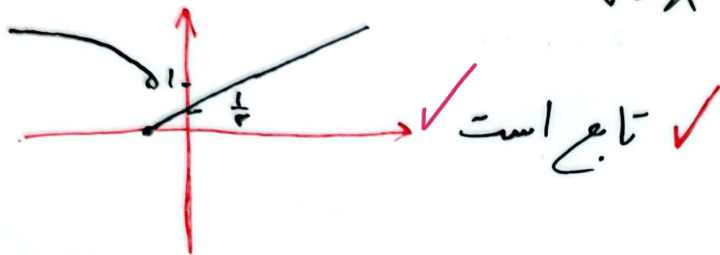
(فصلنامه و دوره)

(سوال ۱)

(۲)

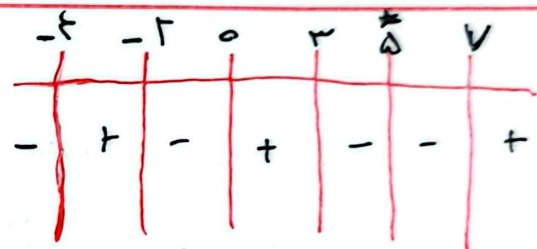
دوازدهم پیر A

$$h = \begin{cases} y-1 & y \geq 0 \\ -y^2 & y < 0 \end{cases} \rightarrow \begin{cases} \frac{y+1}{3} = y & y \geq 0 \\ \sqrt{-h} = y & y < 0 \end{cases}$$



$$g(a) = \sqrt{\frac{a f(a+2)}{f(a)}} \rightarrow -2, 0, 7$$

$$f(a) \rightarrow -4, 3, 5$$



(سوال ۲)

(۲)

فقط حتماً باشد که $x=4$ در دامنه f و $x=4$ در دامنه $f(x-2)$ نیست
که بازه است آفده نیست

$$D_g = (-4, -2] \cup [0, 3) \cup [7, +\infty)$$

الف) $D_F = \mathbb{R} - \{0, 2, -2\}$

$$f(a) = \frac{2a^2 - 2a + 2}{a^2 - 4a}$$

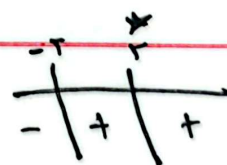
(سوال ۳)

(۲)

ب) $D = (-2, 0) \cup (2, +\infty)$

$$\sqrt{\frac{2a^2 - 2a + 2}{a^2 - 4a}}$$

الف) $y = \sqrt{\frac{a-2}{2a^2 - 2a - 1}} \rightarrow 2$
 $\rightarrow 2, -2$



(سوال ۴)

(۲)

ب) $y = \frac{2a^2 + 1}{f-2[-a]} \rightarrow [-2] \neq 2 \rightarrow D_F = \mathbb{R} - (-2, -2]$

الف) $f(x) = \sqrt{x(x^2-1)} \rightarrow 0, -1, 1$ سوال 5 (2)

$\sqrt{11+x} \rightarrow 0, 10, 11$

$f = 0, 5x \rightarrow$ تعریف نشده $\rightarrow$ خارج صفت $\frac{1}{x-2}, [1, +\infty)$ ✓

ب) $f(x) = \frac{\sqrt{|x-2|-x^2}}{|x|-1} \rightarrow$ ~~0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100~~

$\rightarrow x \neq 1, -1$

$|x-2|-x^2 \geq 0 \rightarrow x-2-x^2 \geq 0 \quad x > 2$

$-x+2-x^2 \leq 0 \quad x < 2$

$\rightarrow -x+2-x^2 \geq 0 \rightarrow x^2+x-2 \leq 0 \rightarrow$

$\frac{-2}{+} \quad \frac{1}{+}$

$\frac{1}{2} \rightarrow D_f = [-2, 1] - \{-1\}$ ✓

الف) $y = \sqrt{(x-2)[x-3]}$ سوال 6 (2)

$\frac{2}{+} \quad \frac{3}{+}$ $\rightarrow D_f = R$ ✓

ب) $y = \sqrt{|x-1|[x-3]}$

$\frac{1}{+} \quad \frac{3}{+}$ $\rightarrow D_f = [3, +\infty)$ ✓

$\frac{1}{-} \quad \frac{3}{-} \quad \frac{4}{+}$

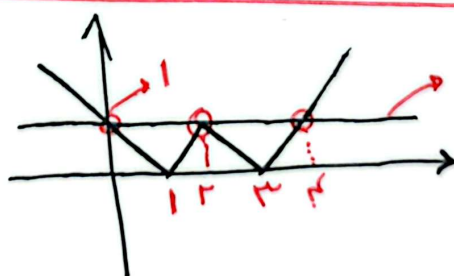
$\rightarrow D_f = [3, +\infty)$ ✓

$y = \frac{1}{||x-2|-1|-k}$

$||x-2|-1| \geq k$

$\leftarrow$ صعب $x=2$

$y, k=1$



3 به خوار

$k=1$ ✓

(7) (2)

$$f(x) = \frac{x^3 + 3x + 2}{\frac{x^2 + 3x + 2}{x+1}} \rightarrow x \neq -2, -1, 1 \rightarrow \text{مجال } x = \mathbb{R}$$

(سوال 8)

(2)

$$x^2 - 6x + 9 = 0 \rightarrow (x-3)^2 = 0 \rightarrow x = 3 \checkmark$$

$$\Delta = 0$$

بند ایش
مضاعف

$$f = \log_{x+1} \log_{\frac{1}{x}}$$

(سوال 9) (2)

$$x+1 > 0 \rightarrow x > -1 \rightarrow x \neq 0, x \neq 1$$

$$\log_{\frac{1}{x}} > 0 \rightarrow \begin{matrix} 1 > x > 0 & \frac{1}{x} < 1 \rightarrow \checkmark \\ x > 1 & \frac{1}{x} > 1 \rightarrow \times \end{matrix}$$

$$\} \xrightarrow{\Delta} D_f = (0, 1) \checkmark$$

$$D_f = [-5, 3] \rightarrow -5 \leq x \leq 3$$

(سوال 10) (2)

$$f(3x^2 - 1) \rightarrow -5 \leq 3x^2 - 1 \leq 3 \rightarrow 3x^2 - 1 \leq 3 \rightarrow x^2 \leq \frac{4}{3}$$

$$\rightarrow -\frac{2}{\sqrt{3}} \leq x \leq \frac{2}{\sqrt{3}} \rightarrow D_{f(3x^2-1)} = \left[-\frac{2}{\sqrt{3}}, \frac{2}{\sqrt{3}}\right] \checkmark$$