

۱۶

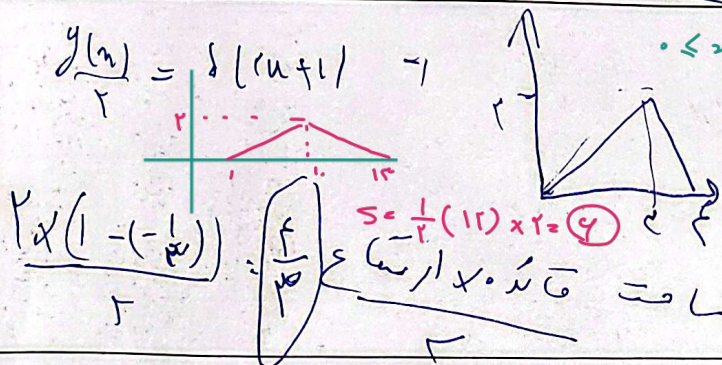
$f(x) = \begin{cases} x-2 & x < 2 \\ x^2 & x \geq 2 \end{cases}$
 $\Rightarrow -\frac{2}{3} < x < \frac{4}{3} \Rightarrow Df = \left[-\frac{2}{3}, \frac{4}{3} \right]$
 $-2 < x < -1 \Rightarrow -2 < x-2 < -4 \Rightarrow -1 < x^2 < -4 \Rightarrow Df = \left[-1, \frac{4}{3} \right]$

۲

$f(x) = x-2 + \sqrt{x-2}$
 $x-2 + \sqrt{x-2} = x \Rightarrow \sqrt{x-2} = 2 \Rightarrow x-2 = 4 \Rightarrow x = 6$
 $\Rightarrow x = 1 \Rightarrow y = 1 + 2 = 3$

اگر تابع را نسبت به x مشتق کنیم
 در $x=1$ به $y=3$ می‌رسیم
 از همان نقطه به $x=6$ می‌رسیم
 این قطع می‌شود

۲



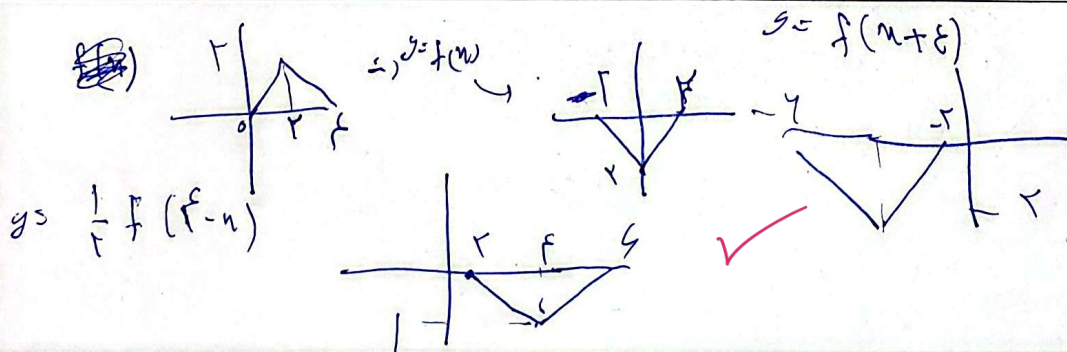
$0 \leq x < 4 \Rightarrow 1 \leq x+1 < 5$
 $\Rightarrow 0 \leq x+1 < 5 \Rightarrow 0 \leq x < 4$
 $\Rightarrow -1 \leq x \leq 4$
 $-\frac{1}{2} \leq x \leq 1$

۱/۵

$\frac{x-a}{2} = x-a = f \Rightarrow x = f+a$
 $A = \begin{pmatrix} f+a \\ a-y \end{pmatrix}$
 $A \cdot \vec{v} = a-y$

$x+a-1 = a-y$
 $10x = 9$

۲



۲

$$c_{n-1} = 0 \Rightarrow c_n = 1 \Rightarrow n = 2$$

$$c_{n-1} = 1 \Rightarrow c_n = 2 \Rightarrow n = 1$$

$$c_{n-1} = -1 \Rightarrow c_n = 0 \Rightarrow n = 0$$

$$-(n+2)(c_{n-1}) > 0 \Rightarrow (n+2)(c_{n-1}) < 0$$

$$D_f = [-2, 0] \cup [1, 2]$$

	-2	0	1	2
-	+	+	+	+
-	-	+	-	+
+	-	+	-	+

$$g(y) = |2n + 2k - c| - 2$$

$$|2n + 2k - c| - 2 = |2n - c| + 1$$

ملاحظات

$$|2k - c| - 2 = 2 + 1$$

$$k = \frac{2n-1}{n+1} + \frac{2n+2}{n+2}$$

$$|2k - c| = 4 \Rightarrow 2k - c = 4 \Rightarrow 2k = 4 + c$$

$$2k - c = -4 \Rightarrow 2k = c - 4$$

$$(k-2)x + \epsilon n(k-1) + 2k + 2$$

$$2k - c = 4 \Rightarrow 2k = 4 + c$$

$$2k - c = -4 \Rightarrow 2k = c - 4$$

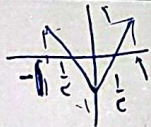
$$f(n) = -\frac{2n-1}{n+1}$$

$$\frac{\frac{2n-1}{n} - 1}{\frac{1}{n} + 1} + k = \frac{2n-1}{n+1}$$

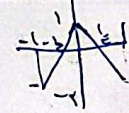
$$(2k - 2)n + 2n + (-2k - 2) = 0$$

$$2n(k-1) - 2k - 2 = 0 \Rightarrow k = 1$$

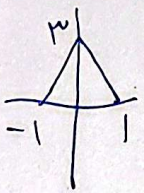
$$y = f(x) + 2$$



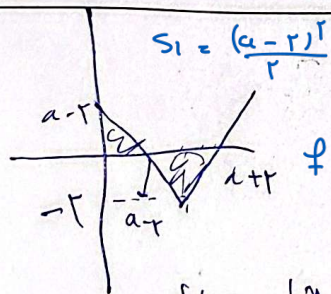
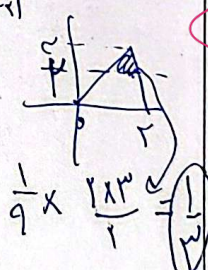
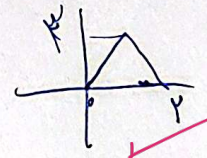
$$\Rightarrow y = f(n) + 2$$



$$\Rightarrow f(n)$$



$$\Rightarrow y = f(n+1)$$



$$S_1 = \frac{(a-1)^2}{2}$$

$$S_2 = \frac{a+1-(a-1)x}{2}$$

$$S_1 = \frac{1}{2} \Rightarrow a = 3$$

$$(a-1)(a-1) + \frac{1}{2} = \frac{1}{2} \Rightarrow a = 1$$

$$f(\frac{1}{a}) = \frac{1}{a}$$

$$(a-1)(a-1) = 1 \Rightarrow a = 2$$

$$f(n) = |n - \sqrt{a}| - 2$$

$$a = \sqrt{a}$$

$$\Rightarrow f(\frac{1}{a}) = (\frac{1}{\sqrt{a}} - \sqrt{a}) - 2$$

$$-\sqrt{a}$$

$$\frac{(a-1)^2}{2} = \frac{1}{2} \Rightarrow a-1 = 1 \Rightarrow a = 2$$

$$\frac{1}{\sqrt{a}} - \sqrt{a} - 2 = \frac{\sqrt{a}}{a} - 2 \Rightarrow \sqrt{a} = 1 \Rightarrow a = 1$$