

تکلیف

۱۵/۸

ادامع

الف) $-f_1(x) = -f_1(x-1) \Rightarrow -f_1(x) = -f_1(x-1) \Rightarrow f_1(x) = f_1(x-1)$ (۲)

$\Rightarrow Df_1 = \left[-\frac{1}{2}, \frac{1}{2}\right]$ ✓

ب) $x = -1 \Rightarrow (-f_2(x)) \Rightarrow x = -1 \Rightarrow x = -1 \Rightarrow f_2(x) = 1$

$\Rightarrow Df_2 = [-1, 1]$ ✓

$x = \sqrt{x-1} \Rightarrow x = \sqrt{x-1} \Rightarrow x = \sqrt{x-1} \Rightarrow x = \sqrt{x-1}$ (۳)

$x = \sqrt{x-1} \Rightarrow x = \sqrt{x-1} \Rightarrow x = \sqrt{x-1} \Rightarrow x = \sqrt{x-1}$

$\Rightarrow y = 1$ ✓

ج) $f(x) = \frac{f(x)}{2} \Rightarrow f(x) = \frac{f(x)}{2} \Rightarrow f(x) = \frac{f(x)}{2}$ (۴)

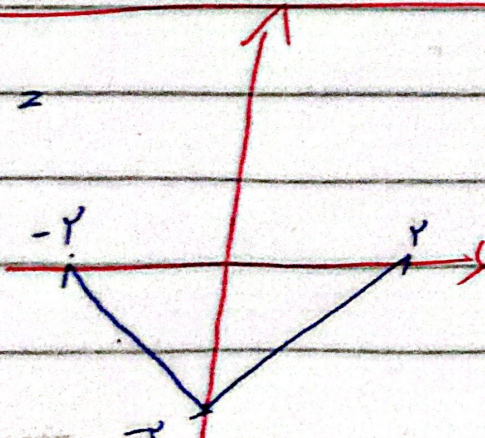
$0 \leq x \leq 2$ $0 \leq x+1 \leq 2$ $0 \leq y \leq 2$

$S = \frac{1 \times 2}{2} = 1$ (۵)

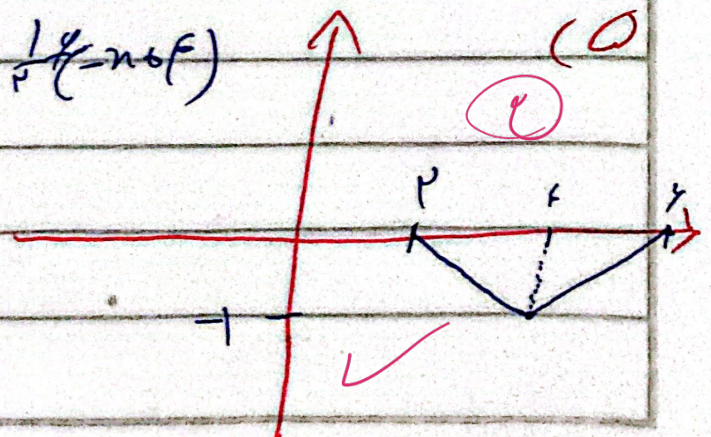
$\frac{x}{2} = 1 \Rightarrow x = 2 \Rightarrow x = 2 \Rightarrow x = 2$ (۶)

$\Rightarrow a = 1, 1 \Rightarrow (a = 1)$ ✓

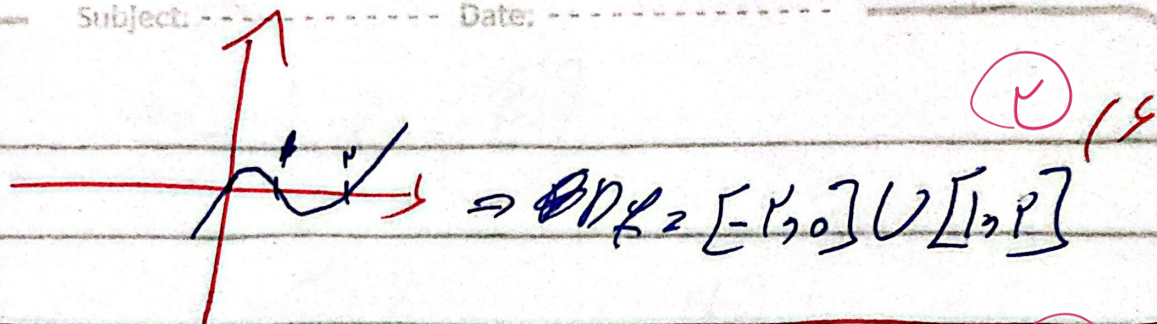
$f(x) =$



$\frac{1}{2}(f(x))$



$$f(x_n) =$$

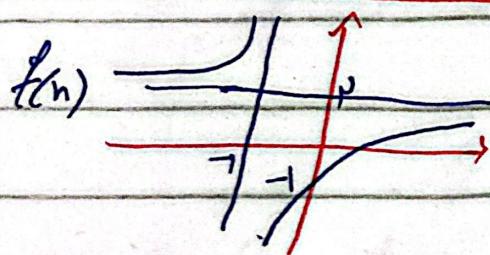


$$|f(x_{n+k}) - c| + 1 \rightarrow |f(x_k + x_{n-k}) + 1 - c| < \epsilon \quad (15)$$

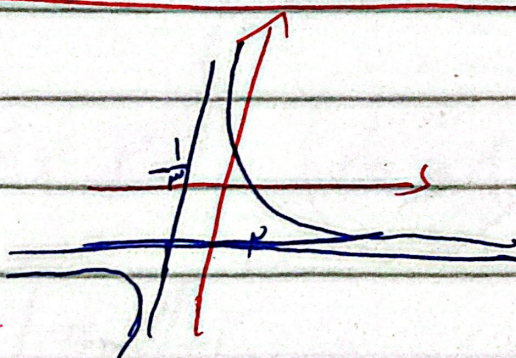
$$|x_n - x| < \epsilon \rightarrow |x_k - x| - \epsilon < \epsilon \rightarrow |x_k - x| < 2\epsilon$$

$$\Rightarrow k = 1, 2 \rightarrow \boxed{k=1, k=2}$$

$|x_k - c| - \epsilon = f(x) \rightarrow |x_k - c| < \epsilon$
 $k < \epsilon < 0 \quad k < -\log x$

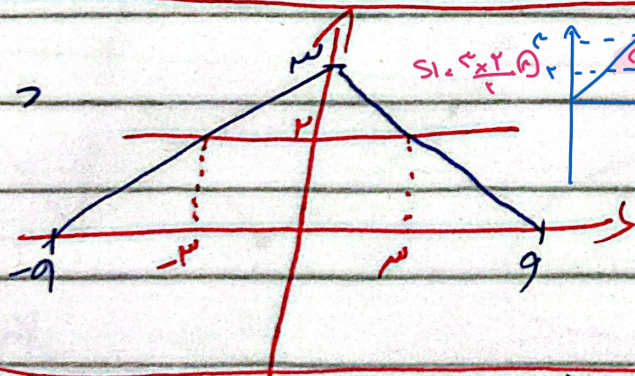


$\Rightarrow$



$\Rightarrow$ فواصل بسته با ۱

$$f(x) =$$



$$S_1 = \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$$

$$\frac{h_1}{h_2} = \frac{1}{2} \quad \frac{S_1}{S_2} = \frac{1}{4}$$

$$\frac{S_1}{S_2} = \frac{1}{4} \rightarrow \boxed{S_1 = \frac{1}{4}}$$

$$\Rightarrow \int_0^1 f(x) dx = \frac{1}{2}$$

$$\frac{1}{2} = \frac{(a-x)^2}{2} + \frac{f(x)}{2} \quad (a-x)^2 > 1 \Rightarrow a > 1$$

$$\Rightarrow f\left(\frac{1}{a}\right) = \frac{1}{a^2}$$