

14,5

سین

نقطه استای

$$f(x) \cdot f' \quad (11)$$

الف) $3x - 2 = -4$

$$\begin{aligned} 3x = -4 + 2 &\Rightarrow 3x = -2 \Rightarrow x = -\frac{2}{3} \\ 3x - 2 = 2 &\Rightarrow 3x = 4 \Rightarrow x = \frac{4}{3} \end{aligned} \Rightarrow Df' = \left[-\frac{2}{3}, \frac{4}{3}\right]$$

$$f(x) \cdot f'$$

ب) $\begin{aligned} 3(-4) - 2 &= -14 \\ 3(-2) - 2 &= -8 \end{aligned} \Rightarrow Df' = [-14, -8]$

$$f(x) = x + \sqrt{x - 2}$$

(2)

$$f(x-2) = x - 2 + \sqrt{x - 2}$$

نقطه استای

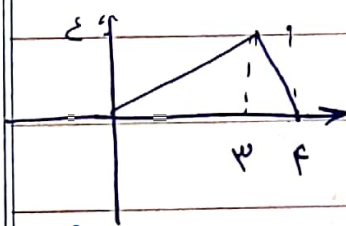
$$x = y$$

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

(2)

$$y = y - 2 + \sqrt{y - 2} \Rightarrow 2 = \sqrt{y - 2}$$

$$2 = y - 2 \Rightarrow y = 4$$



$$g(x) = 2f(3x-2)$$

نقطه استای

$$g' = 2$$

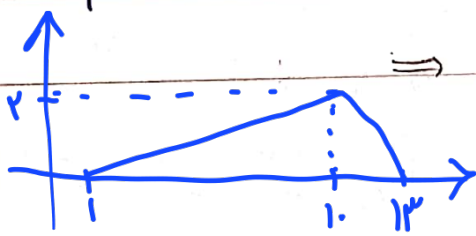
(2)

$$x' = 2$$

$$x' = 1/2$$

نقطه استای

$$Df = [1, 13]$$



$$\frac{2 \times 13}{2} = 13$$

$$S = 13$$

$$A(r, \nu) \rightsquigarrow \nu = f(r) \quad (*)$$

$$\text{solução} \Rightarrow y = a + r f\left(\frac{u-a}{r}\right)$$

$$\rightsquigarrow y = a + r(-\nu)$$

$$y = a - r$$

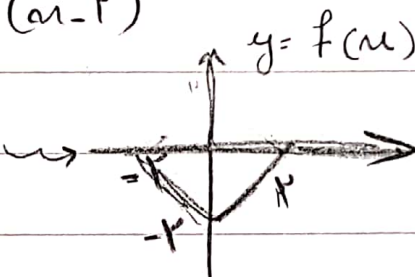
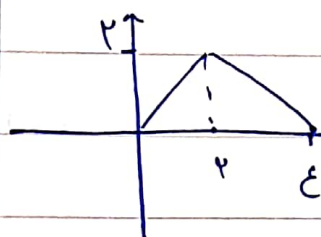
$$\frac{u-a}{r} = \nu$$

$$\Rightarrow u-a = \epsilon \Rightarrow u = a + \epsilon$$

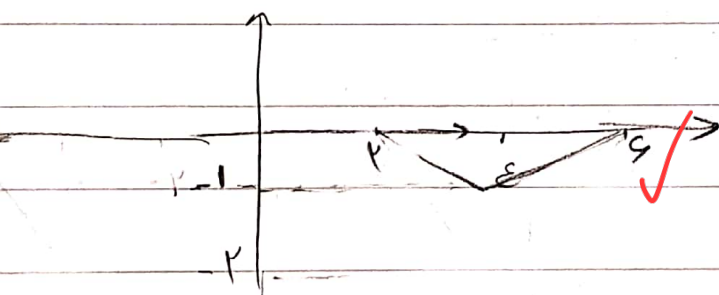
$$y = r u - a \Rightarrow a - r = r(a + \epsilon) - a$$

$$a - r = r a + 1 - a \rightsquigarrow -r = a \quad \text{✓} \quad \textcircled{r}$$

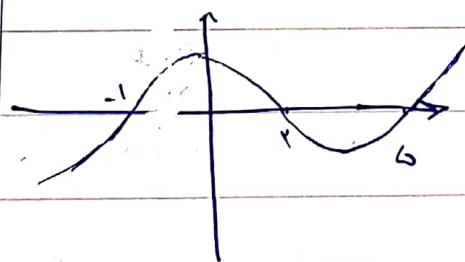
$$y = -f(a-r)$$



(5)



✓



$$f(u) : -1, r, b$$

(4)

$$u_{n-1} = -1$$

$$u_{n-1} = r$$

$$u_{n-1} = b$$

$$u_n = 1$$

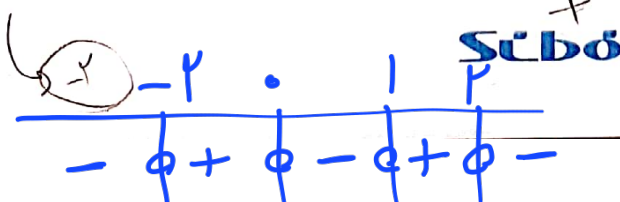
$$u_n = \frac{r}{\epsilon}$$

$$u_n = \frac{u}{\epsilon}$$

$$-(u+r) f(u_{n-1})$$

$$-(u+r) f(u_{n-1}) \geq -D = [-r, r] \cup [1, r]$$

$$(u+r) f(u_{n-1}) \leq$$



$$D_y = [-r, -\frac{r}{\epsilon}] \cup [\frac{1}{\epsilon}, \frac{r}{\epsilon}]$$

$$f(n) = |pn - p| + 1$$

(v)

ابكر

$$f(n+K) = |p(n+K) - p| + 1$$

مربع

$$|pn + pK - p| + 1 - p$$

$$g(n) = |pn + pK - p| - p$$

مربع

$$g(n) = |p| \xrightarrow{n=0} |p| + 1 = |pK - p| - p$$

$$p = |pK - p| - p$$

$$q = |pK - p|$$

$$pK - p = q$$

$$pK = q \Rightarrow K = \frac{q}{p}$$

$$p - K = q$$

$$-pK = p$$

$$K = \frac{-p}{p}$$

(p)

بكر K.

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

$$\frac{-\frac{2}{3}u+1}{\frac{u}{3}+1}$$

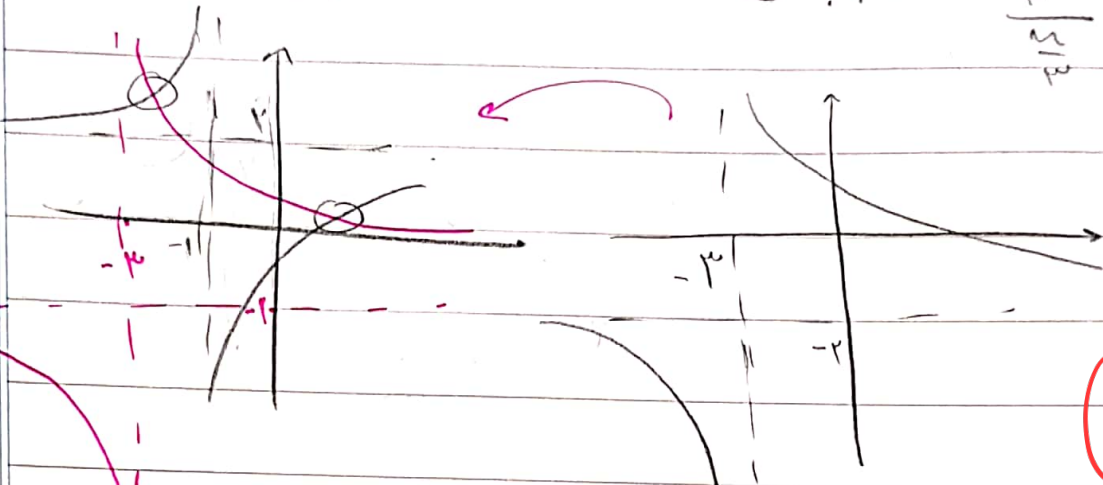
(1)

لجانب قائم: -1
لجانب افقی: 2

لجانب قائم: -2
لجانب افقی: -1

$$\frac{u}{3} = 1 \Rightarrow u = 3$$

$$\frac{-\frac{2}{3}u}{\frac{u}{3}} = \frac{-4}{1} = -4$$

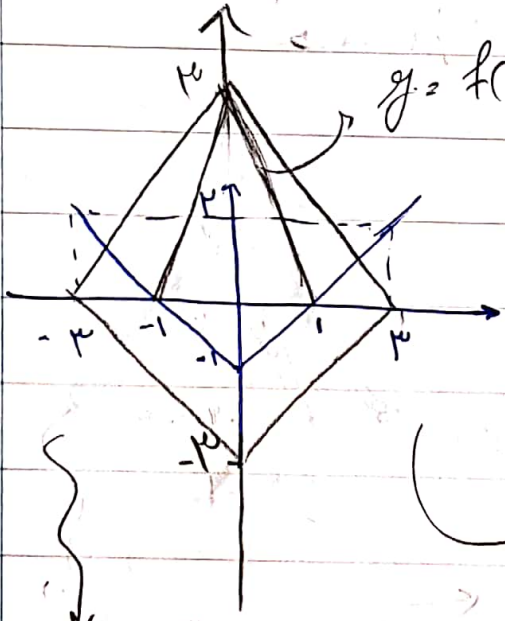


(2)

ادان 2 انعکاس در برابر

لجانب افقی بالبراز $y=2$ را ببر

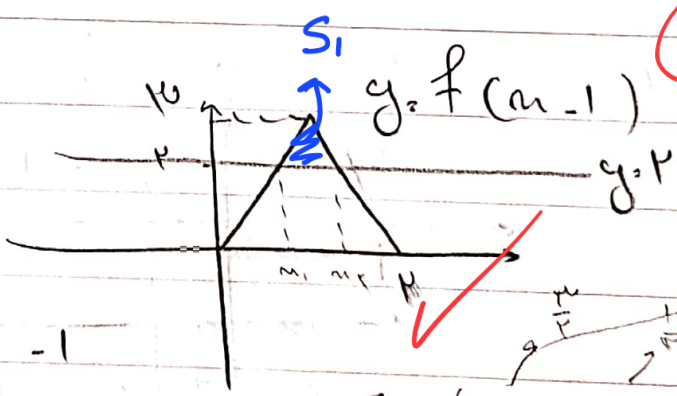
جانب افقی ادان $-2 =$ مربع



$$g_1 = -f\left(\frac{u}{3}\right) + 2$$

(9)

(1/5)



$$g_1 \rightarrow \frac{1}{2} \rightarrow \frac{u}{3} \Rightarrow 1$$

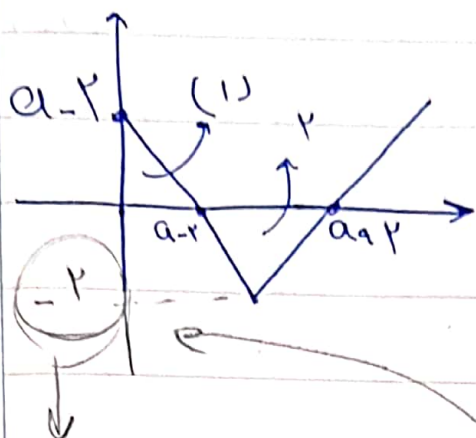
$$\rightarrow -f(-1) + 2 = 2$$

$$\frac{u}{3} - f(1) + 2 = 2$$

$$\frac{S_1}{S_2} = \left(\frac{h_1}{h_2}\right)^2$$

$$\frac{S_1}{\mu} = \left(\frac{1}{\mu}\right)^2 \rightarrow S_1 = \frac{1}{\mu}$$

(1.)



$$f(x) = |x - a| - r$$

$$S_1 + S_2 = \frac{9}{r}$$

$$\frac{(a-r)^r}{r} = \frac{a^r + \epsilon - ra}{r}$$

$$\frac{(a+r - a+r)^r}{r} = r$$

$$\Rightarrow \frac{a^r + \epsilon - ra + 1}{r} = \frac{9}{r}$$

$$a^r - ra + 1 = 9$$

$$a^r - ra - 8 = 0$$

$$(a-2)(a+1)$$

$$f\left(\frac{1}{r}\right) = ?$$

$$\begin{cases} a = 2 \\ a = -1 \end{cases}$$

$$\begin{cases} a = 2 \\ a = -1 \end{cases} \rightarrow \text{جواب}$$

$$f(x) = |x - 2| - r$$

$$\hookrightarrow f\left(\frac{1}{r}\right) = \left|\frac{1}{r} - 2\right| - r \Rightarrow \frac{1}{r} - \frac{9}{r} = \frac{r}{r}$$

$$\frac{1}{r} - \frac{9}{r} = \frac{r}{r}$$

$$\left|\frac{-1}{r}\right| = \frac{1}{r}$$