

Date: / /

Subject: _____

نیایش زندی به نام خدا ^{۱۷} دوازدهم اردیبهشت ۸۰ کلیف شماره ۴

الف) $-2 \leq 3x \leq 4$ $-2 \leq 3x - 2 \leq 2$ $-\frac{2}{3} \leq x \leq \frac{4}{3}$
 $D_p = [-\frac{2}{3}, \frac{4}{3}]$

ب) $-12 \leq 3x \leq -6$ $-14 \leq 3x - 2 \leq -8$ $-14 \leq x \leq -8$
 $D_p = [-14, -8]$ (۷)

۲- $f(x) = x + \sqrt{x-2}$ $(x-2) + \sqrt{(x-2)-2} = x-2 + \sqrt{x-4}$

مربع میزنیم: $y = x$ ← سبب تابع را حل می‌کنیم

$f(x) = x-2 + \sqrt{x-4} \rightarrow y = (\sqrt{x-4} + \frac{1}{4})^2 + \frac{y}{4}$

$y - \frac{y}{4} = (\sqrt{x-4} + \frac{1}{4})^2$ $\sqrt{y - \frac{y}{4}} - \frac{1}{4} = \sqrt{x-4}$

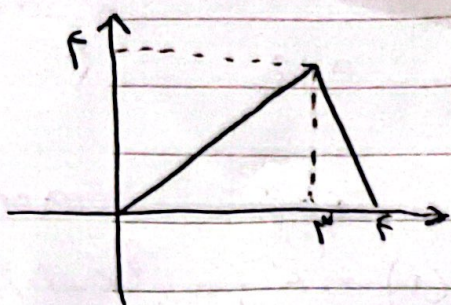
$y - \frac{y}{4} + \frac{1}{4} - \sqrt{y - \frac{y}{4}} = x-4$ $y - \frac{y}{4} - \sqrt{y - \frac{y}{4}} + \frac{15}{4} = x$

$y - \sqrt{y - \frac{y}{4}} + \frac{15}{4} = x$ $y = x - \sqrt{x - \frac{y}{4}} + \frac{15}{4}$ ^{در اینجا $y=x$ می‌گذاریم}

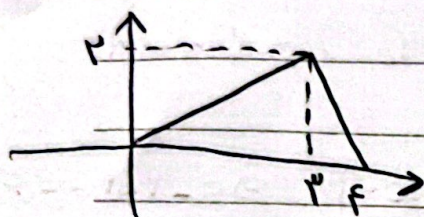
$x - \sqrt{x - \frac{y}{4}} + \frac{15}{4} = x$ $\frac{15}{4} = \sqrt{x - \frac{y}{4}}$ $\frac{100}{16} = x - \frac{y}{4}$

$x = \frac{100}{16} + \frac{y}{4}$ $\frac{128}{16} = \frac{32}{4} = 8$ ^{زیر آن $y=x$ قرار می‌دهیم} $(8, 8)$

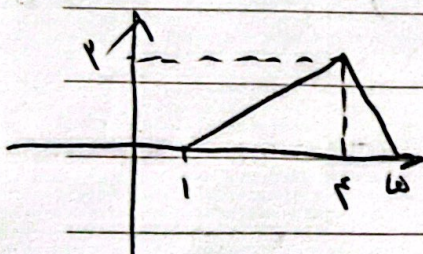
پس با عرض ۸



$$g(x) = 2f(3x+1)$$

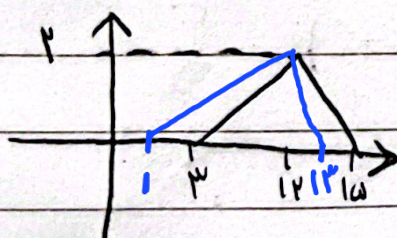


$$y = f(3x+1)$$



$$y = f(3x)$$

1/5



$$y = f(x)$$

$$S = \frac{1 \times 1}{1} = 1$$

Date: / /

Subject: _____

$$y = f(x)$$

$$y = a + r f\left(\frac{x-a}{r}\right)$$

$$A(r, -r)$$

$$A'(x, rx-1)$$

$$a = r$$

$$-r$$

$$f(r) = -r$$

$$f\left(\frac{x-a}{r}\right) = f(r)$$

$$\frac{x-a}{r} = r \quad x-a = r^2$$

$$a = x - r^2$$

$$A'(x, x - r^2 + rf(r)) = A'(x, rx-1)$$

$$x - r^2 + \underbrace{rf(r)}_{-r} = rx - 1$$

$$x - r^2 + (-r) = rx - 1$$

(r)

$$x - 1 = rx - 1$$

$$x = -r$$

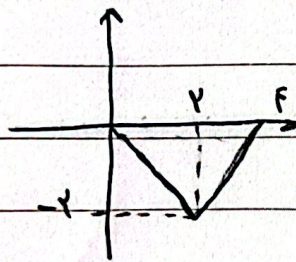
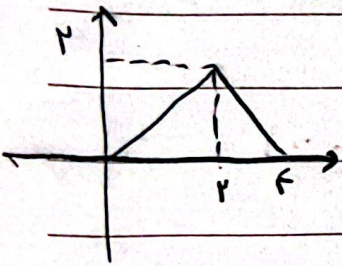
$$a = x - r$$

$$a = -r - r = -2r$$

$$y = -f(xr)$$

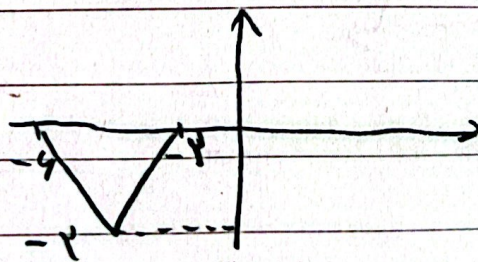
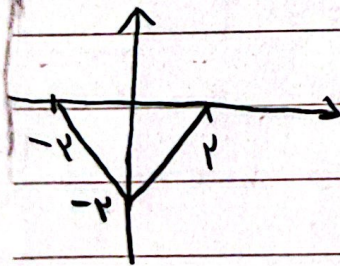
$$y = f(x-r)$$

-d



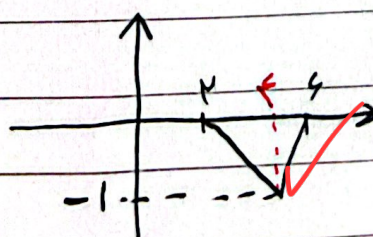
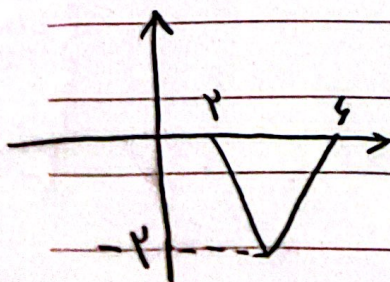
$$y = f(x)$$

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



$$y = f(-x+r)$$

$$y = \frac{1}{r} f(r-x)$$



(r)

PILLNOTEBOOK

Date: / /

Subject: _____

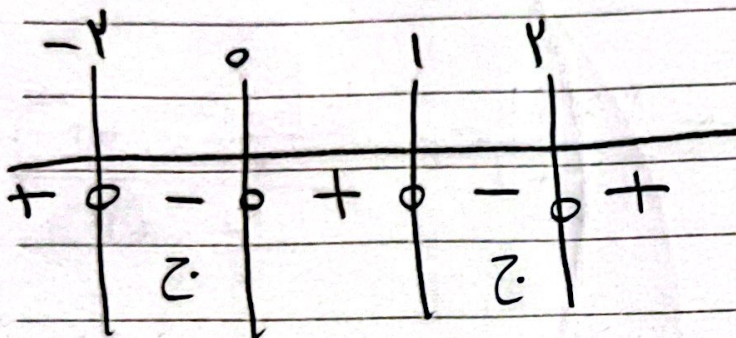
$$y = \sqrt{-(x+2)f(3x-1)} \quad -(x+2)f(3x-1) \geq 0 \quad -4$$

$$(x+2)f(3x-1) \leq 0 \quad f(-1)=0 \quad f(2)=0 \quad f(5)=0$$

-1 ← 2 ← 5 ← ∞

$$3x-1=-1 \quad 3x=0 \quad (x=0) \quad 3x-1=2 \quad 3x=3$$

$$(x=1) \quad 3x-1=5 \quad 3x=6 \quad (x=2)$$



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

(2)

$$f(x) = |2x-3|+1 \quad g(x) = |2(x+k)-3|+1-3 \quad -V$$

$$g(x) = |2x+2k-3|-2 \quad \text{حل برده} \rightarrow (0, 2)$$

$$f(x) \xrightarrow{x=0} |-3|+1=4 \Rightarrow y=4 \quad \text{حل (4,0) برده}$$

$$|2x+2k-3|-2 \xrightarrow{x=0} |2k-3|-2=4 \quad (2)$$

$$|2k-3|=6$$

$$2k-3=6$$

$$2k=9$$

$$k = \frac{9}{2} \quad \checkmark$$

$$2k-3=-6$$

$$2k=-3$$

$$k = -\frac{3}{2} \quad \text{غیر قابل قبول}$$

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

$$\frac{1-2\left(\frac{1}{3}x\right)}{\frac{1}{3}x+1} + K = \frac{2x-1}{x+1}$$

$$\frac{1-\frac{2}{3}x}{\frac{1}{3}x+1} + K = \frac{2x-1}{x+1}$$

$$\frac{\frac{1x}{3}}{\frac{x+3}{3}} + K = \frac{2x-1}{x+1}$$

$$\frac{x}{x+3} + K = \frac{2x-1}{x+1} \quad \frac{x+Kx+3K}{x+3} = \frac{2x-1}{x+1}$$

$$\frac{(K+1)x+3K}{x+3} = \frac{2x-1}{x+1}$$

$$2x^2 + 4x - 3 = (K+1)x^2 + (3K+1)x + 3K$$

$$2x^2 + 4x - 3 = (K+1)x^2 + (3K+1)x + 3K$$

$$(K-1)x^2 + (3K-1)x + (3K+3) = 0$$

سوال 1 جواب

$$(K-1)x^2 + 3x(K-1) + 3K+3 = 0$$

$$b^2 = 4ac$$

$$\Delta = 0$$

$$(3K-1)^2 = 4(K-1)(3K+3)$$

$$(K-1)^2 = (K-1)(3K+3)$$

$$3K-1 = 3K+3$$

$$K=1$$

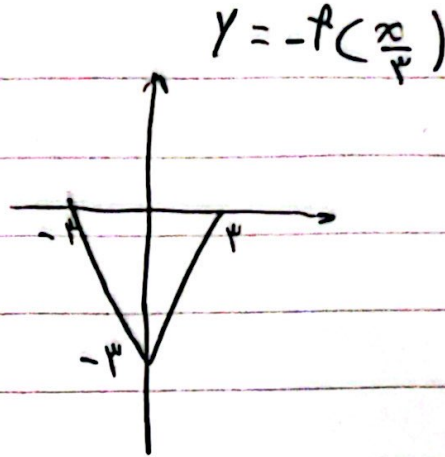
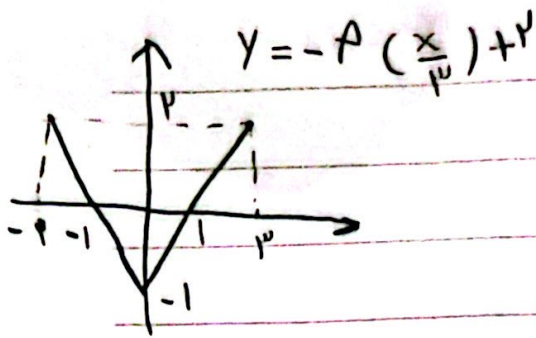
4 حالت دارد که فقط یکی از آنها جواب می دهد ← معادله درجه 1 باشد

$$K=1$$

Date: / /

Subject: _____

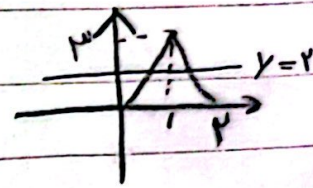
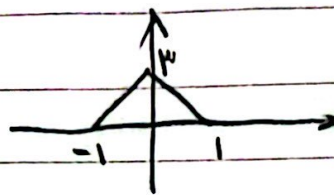
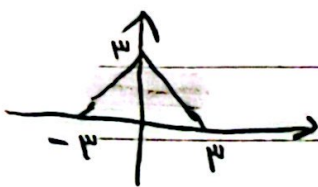
-9



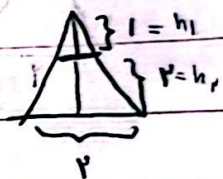
$y = f\left(\frac{x}{\mu}\right)$

$y = f(x)$

$y = f(n-1)$



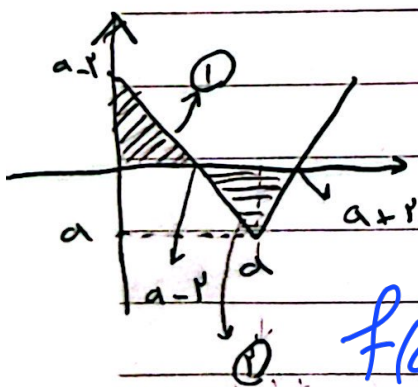
$\frac{h_1}{h_1+h_2} = \frac{1}{3} \xrightarrow{\text{و چون } n} \frac{1}{9}$



سین باید $\frac{1}{9}$ مساحت مثلث بزرگ را حساب کنیم

$S = \frac{2 \times 3}{2} = 3 \times \frac{1}{9} = \frac{1}{3}$ ✓

-10



$S_0 = \frac{(a-r)(a-r)}{2} = \frac{(a-r)^2}{2}$ ✓

$S_r = \frac{(a+r-a+r)(a)}{2} = ra$

$f(a) = -r$

$S_r = r$

$\frac{a-r}{a} = \frac{a-r}{a} \rightarrow a$

$\frac{a^2 - ra + r + ra}{2} = \frac{a^2}{2} \quad a^2 + r = 9 \quad a^2 = 9$

$a = \pm \sqrt{9}$

CS

Scanned with CamScanner

a = √9

a = ±√9

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

Scanned with CamScanner

Date: / /

Subject: _____

$$f(x) = |x - \sqrt{a}| - r \quad f\left(\frac{1}{\sqrt{a}}\right) = 0$$

$$\left| \frac{\sqrt{a}}{a} - \sqrt{a} \right| - r = \sqrt{a} - \frac{\sqrt{a}}{a} - r \quad \boxed{\frac{r\sqrt{a}}{a} - r}$$