

(۱) انت $-2 \leq x \leq 2 \Rightarrow -2 \leq 3x-2 \leq 2 \Rightarrow -2 \leq 3x \leq 4$

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

$-2 \leq x \leq -2 \Rightarrow -12 \leq 3x \leq -4, -14 \leq 3x-2 \leq -8$

$Op(3x-2) = [-14, -8]$

ابتدا دو دایره $y = x-2 + \sqrt{x-2}$

۲) ابتدا می بینیم نمودار تابع $f(x-2)$ خط $y=x$ دارد تمام نقطه قطعی می شود.

$x-2 + \sqrt{x-2} = x \Rightarrow \sqrt{x-2} = 2 \Rightarrow x-2 = 4$

$y=x \Rightarrow y=4$

$\Rightarrow x=6$

نقطه A

محلول سطح تابع $f(x-2)$ خط $y=x$ در نقطه ای به عرض و طول ۱ قطعی می شود.

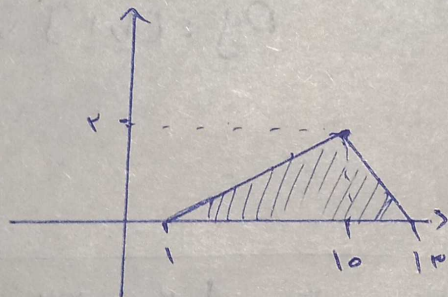
$[f(x') = y' \Rightarrow f^{-1}(y') = x']$

(۳) - از راه دایره

$0 \leq x \leq 4 \Rightarrow 0 \leq 3x \leq 12$

$1 \leq 3x+1 \leq 13$

۲) و چون عرض نقاط نیز نسبت به هم است پس دایره



$S = (13-1) \times 2 \times \frac{1}{2}$

$S = 12$

$A(2, -3)$

$A'(x, y)$

$\Rightarrow \frac{x-a}{2} = 2 \Rightarrow x-a = 4$
 $a+2 = x$

$y = 2x-1$

$A'(x, 2x-1)$

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

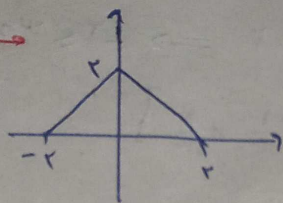
$y = a + 2f(2) = a-4$

$2a = a-4 \Rightarrow a = -4$

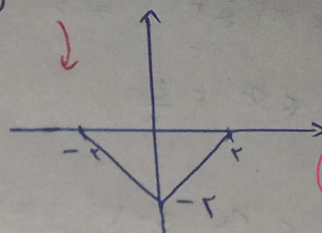
4. نکته

توجه

$$y = -f(x) \rightarrow$$

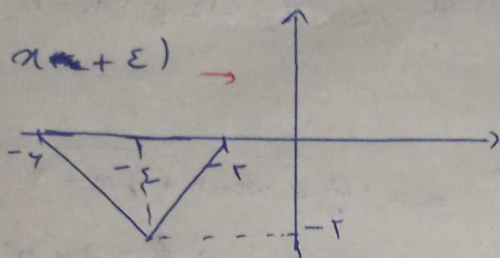


$$y = f(x)$$

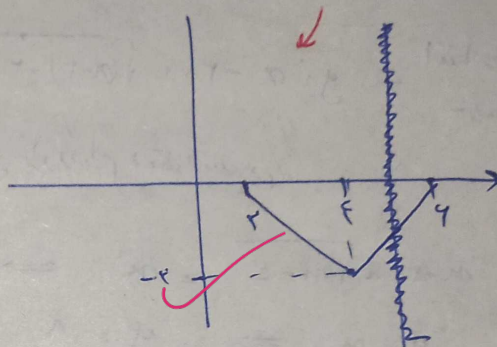


(a)

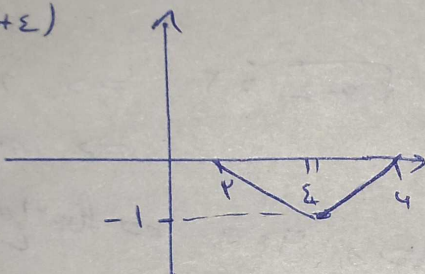
$$y = f(x + \epsilon) \rightarrow$$



$$y = f(-x + \epsilon)$$



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



$$y = \sqrt{-(n+r)f(r_{n-1})}$$

$$\Rightarrow n+r \geq 0 \quad n \geq -r$$

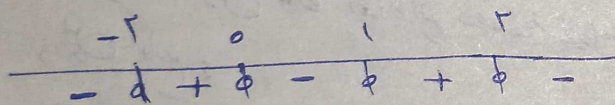
$$f(-1) \geq 0 \quad f(r) \geq 0 \quad f(0) \geq 0$$

$$r_{n-1} \geq -1 \quad r_{n-1} \geq r \quad r_{n-1} \geq 0$$

$$n \geq 0$$

$$n \geq 1$$

$$n \geq r$$



$$Dy \in [1, r] \cup [-r, 0]$$

$$-(n+r)f(r_{n-1}) \geq 0$$

$$\Rightarrow (n+r)f(r_{n-1}) \leq 0$$

$$f(x) = g(x) = |r(n+k)-r|+1-r = |r_{n+2k}-r|-r$$

$$g(x) = f(x) = |r_{n+2k}-r|-r = |r_{n-1}-r|+1$$

و چون f و g در $x=0$ همبسته است یعنی $f(0)=g(0)$

$$|r_{n+2k}-r|-r = |-r|+1 \Rightarrow |r_{n+2k}-r| \geq r+1 \Rightarrow r_{n+2k}-r \geq r$$

$$r_{n+2k}-r \geq -r \quad k \geq -\frac{r}{r}$$

$$\left[k \geq \frac{r}{r} \right] \Rightarrow k \geq 1$$

تکلیف ۲

سوال اول

$$y = \frac{2m-1}{n+1}$$

قریند سبب بطل
فا

$$y = -\frac{2m-1}{n+1} \Rightarrow y = \frac{1-2m}{n+1}$$

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طول ساق برابر

$$y = \frac{1 - \frac{2m}{3}}{\frac{n}{3} + 1} \Rightarrow y = \frac{\frac{3-2m}{3}}{\frac{n+3}{3}} = \frac{3-2m}{n+3}$$

$$y = \frac{3-2m}{n+3} + k$$

کک طوری با

$$y = \frac{3-2m}{n+3} + k$$

$$\frac{3-2m}{n+3} + k = \frac{2m-1}{n+1}$$

$$\Rightarrow \frac{3-2m+k(n+3)}{n+3} = \frac{2m-1}{n+1} \Rightarrow$$

$$3m-2m^2+k(n^2+3n)+3-2m = 2m^2-n+4m-3$$

$$n^2(k-2) + 2n(k-1) + 4+3k=0$$

$$14(k-1)^2 - 4(4+3k)(k-2) = 0$$

$$4(k^2-2k+1) - 4(k^2-2k-1) = 0$$

$$k^2-2k+2=0$$

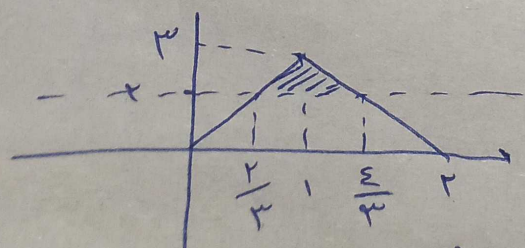
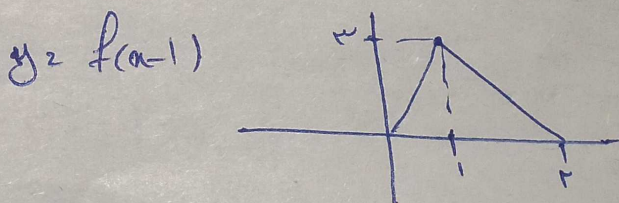
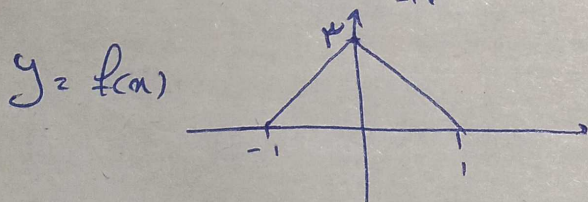
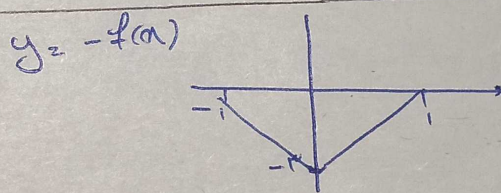
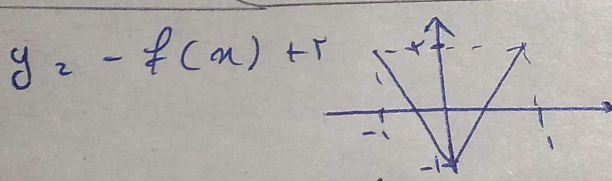
$$k-2(1) = 0$$

۱) عبارت معادله خط با $k=2$

۲) $\Delta=0$ و $n=1$ و $n=2$

۳) $\Delta=0$ و $n=1$ و $n=2$

۴) $\Delta=0$ و $n=1$ و $n=2$

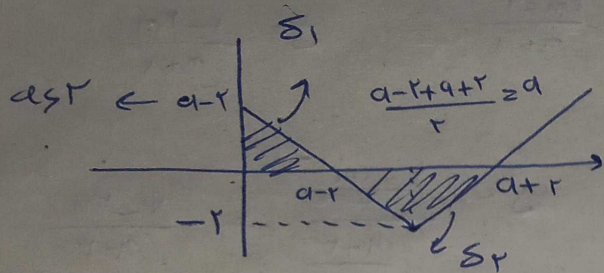


$$\frac{1}{3} = \frac{n}{3} \Rightarrow n = \frac{1}{3}$$

$$C_{\text{شماره}} \delta = \frac{1}{3} \times 1 \times \frac{1}{3} = \frac{1}{9}$$

ثابت

سوال زنگنه



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

$$f(a) = -r$$

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1, 20

$$\delta_1 + \delta_r = \frac{q}{r} \Rightarrow \frac{1}{r}(a-r)^r + \epsilon(+r) \frac{1}{r} = \frac{q}{r}$$

$$\frac{1}{r}(a-r)^r = \frac{1}{r} \Rightarrow (a-r)^r \geq 1 \quad \begin{matrix} a-r \geq 1 \\ a-r \geq -1 \end{matrix}$$

$$a-r > 0 \quad \boxed{a > r} \quad \begin{matrix} \text{وقتی } a \geq r \\ \text{وقتی } a \geq 1 \end{matrix}$$

$$f\left(\frac{1}{r}\right) = \left|\frac{1}{r} - r\right| - r = \left(\frac{1}{a} - r\right) - r = -\frac{10}{a}$$

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

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