

تکلیف شما را

۱۷، ۵

ایلیا ماسی دوازدهم پسر A

$$-2 \leq \frac{3n+2}{8} \leq 4 \Rightarrow -10 \leq 3n+2 \leq 30$$

$$\Rightarrow -12 \leq 3n \leq 28 \Rightarrow -4 \leq n \leq 9 \Rightarrow D_f = [-4, 9]$$

$$n = -2 \Rightarrow f(3n-2) = -1$$

$$n = 3 \Rightarrow f(3n-2) = 7 \Rightarrow D_f = [-1, 7]$$

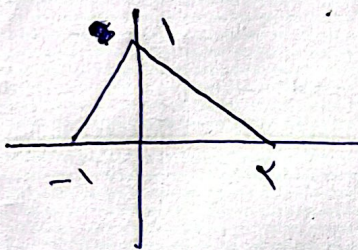
$$n = -1 \Rightarrow \frac{3n+1}{2} = -1 \Rightarrow D_f = [-1, 5]$$

$$n = 3 \Rightarrow \frac{3n+1}{2} = 5$$

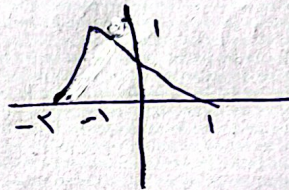
$$\Rightarrow -1 \leq 2 - 8n < 5 \Rightarrow -2 \leq -8n < 3$$

$$\Rightarrow -\frac{3}{8} < n \leq \frac{2}{8}$$

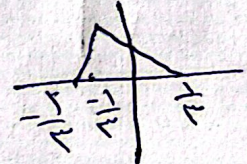
$$\Rightarrow D_f(8n) = \left(-\frac{3}{8}, \frac{2}{8}\right]$$



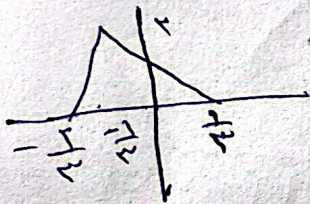
۱ واحد عمودی



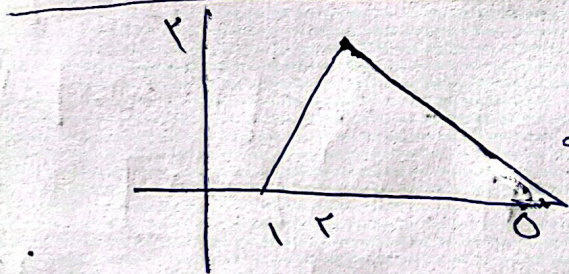
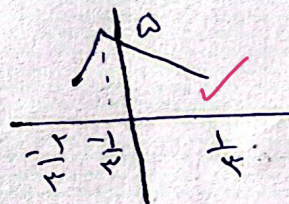
۱/۲ فشرده x



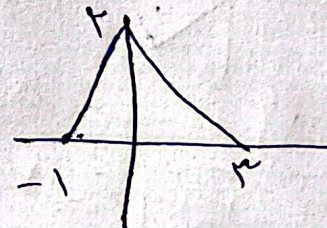
۲ واحد عمودی



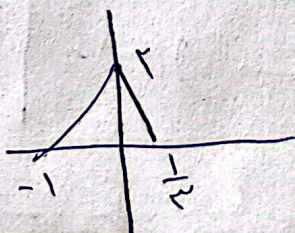
۳ واحد عمودی



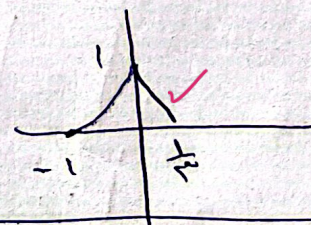
۲ واحد عمودی



۱/۴ فشرده x



۴ فشرده

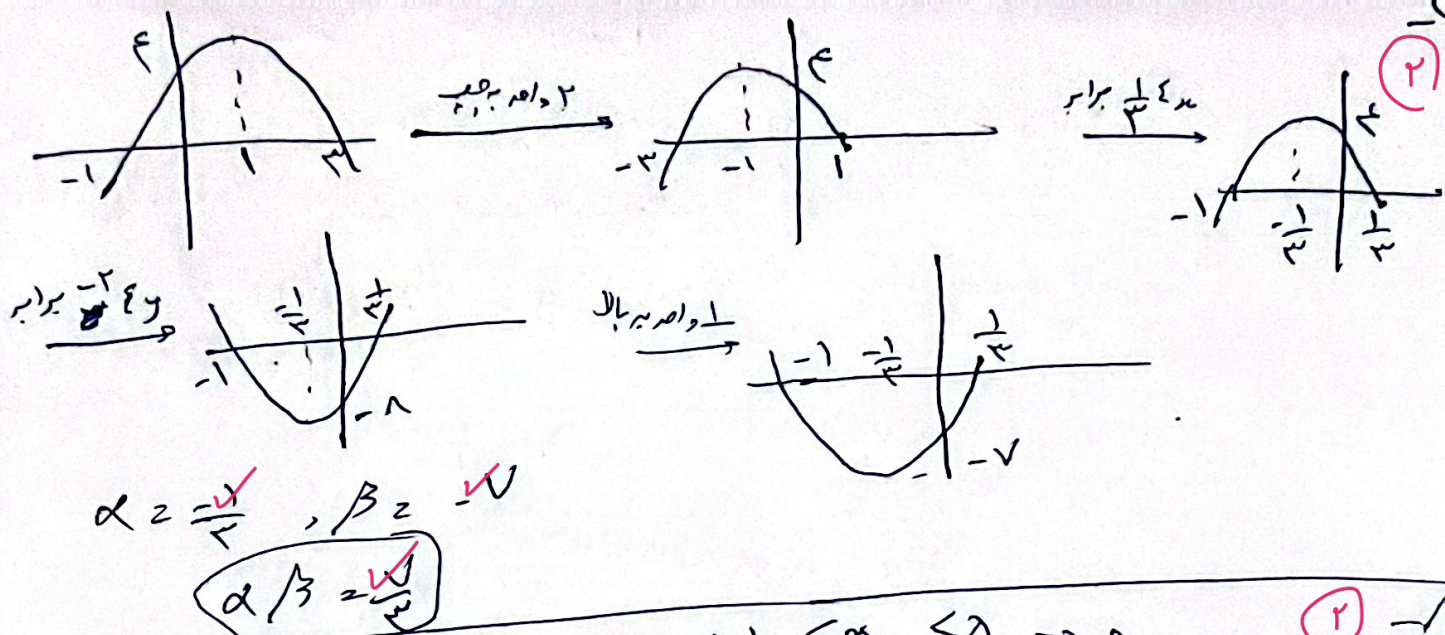


$$\frac{1}{4}(n-4)^2 + 3 = 0 \Rightarrow \frac{1}{4}(n-4)^2 = -3$$

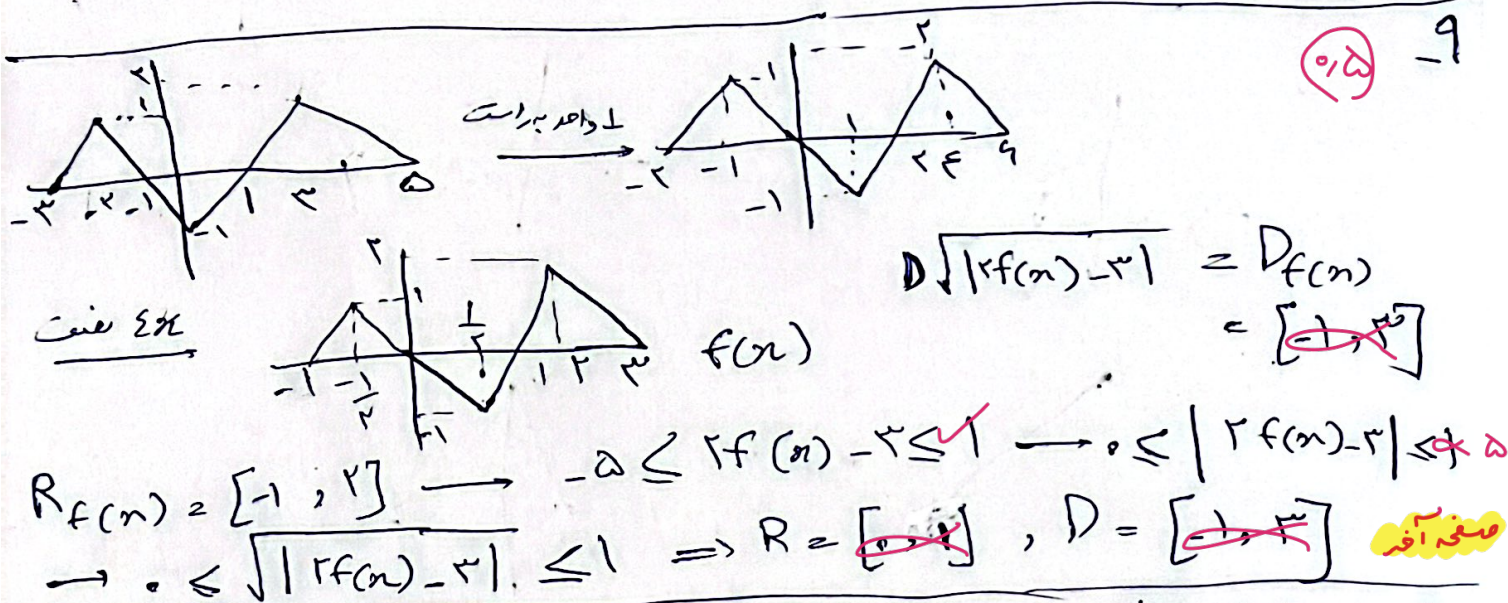
$$\Rightarrow (n-4)^2 = -12 \Rightarrow n-4 = \pm 2\sqrt{3}$$

$$\Rightarrow n < 4$$

فشرده را منفی نمی کند



$D_{f(n-1)}: a < n-1 \leq \epsilon \Rightarrow a+1 < n \leq \delta \Rightarrow D_{f(n-1)} = (a+1, \delta]$
 $Dg(n+1): -1 < n+1 < b \Rightarrow -2 \leq n < b-1 \Rightarrow Dg = [-2, b-1)$
 $\Rightarrow (a+1, \delta] \cap [-2, b-1) = (-2, \delta) \Rightarrow a+1 = -2 \Rightarrow a = -3$
 $b-1 = \delta \Rightarrow b = 4$
 $a-b = -3-4 = -7$



$\frac{n-1}{2n-3} + 1 \geq \left| \frac{n-1}{2n-3} \right| \xrightarrow{\text{برابر}} g(n) = \left| \frac{n-1}{2n-3} \right| + 1$
 $n + g(n) = n + \left| \frac{n-1}{2n-3} \right| + 1 < 0$
 $\frac{n-1 + 2n^2 - 3n + 1}{2n-3} = \frac{2n^2 - 2n}{2n-3} < 0 \Rightarrow \frac{-\sqrt{2} \sqrt{2} \frac{\sqrt{2}}{2}}{-1+1-1+1} < 0$
 $\frac{n-1 - 2n^2 + 3n - 2n + 1}{2n-3} > 0 \Rightarrow \frac{-2n^2 + 2n + 1}{2n-3} > 0 \Rightarrow (-\infty, \frac{-\sqrt{5}+1}{2}) \cup (\frac{\sqrt{5}+1}{2}, \infty)$

$$D_{y_1} = [-r, \Delta] \rightarrow -r \leq x \leq \Delta \rightarrow -\frac{1}{r} \leq \frac{x}{r} + 1 \leq \frac{\Delta}{r} \Rightarrow D_f = \left[-\frac{1}{r}, \frac{\Delta}{r}\right]$$

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$$R_{y_1} = [-1, r] \rightarrow -1 \leq f \leq r \rightarrow -\Delta \leq rf - r \leq 1 \rightarrow 0 \leq |rf - r| \leq \Delta$$

$$0 \leq \sqrt{|rf - r|} \leq \sqrt{\Delta} \Rightarrow R_f = [0, \sqrt{\Delta}]$$

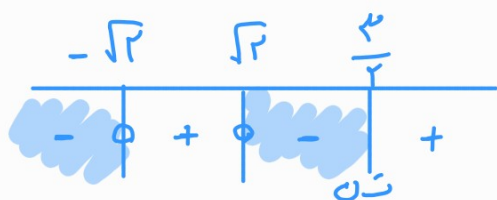
$$g(x) = \left| \frac{(x-2)+1}{2(x-2)+1} \right| + 1 = \left| \frac{x-1}{2x-3} \right| + 1$$

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$$x + g(x) < 0 \rightarrow \left| \frac{x-1}{2x-3} \right| < -1-x$$

از به قدر مطلق بزرگتر شده پس باید مثبت باشد : $-1-x > 0 \rightarrow x < -1$

$$\xrightarrow{x < -1} \frac{x-1}{2x-3} < -1-x \rightarrow \frac{2x^2-4}{2x-3} < 0 \rightarrow \frac{2(x-\sqrt{2})(x+\sqrt{2})}{2x-3} < 0$$



$$\xrightarrow{x < -1} x < -\sqrt{2} \rightarrow (-\infty, -\sqrt{2})$$