

کتاب ریاضی دوازدهم دبیرستان

$$-2 \leq \frac{3x+2}{5} \leq 2$$

$$-2 \leq x \leq 2 \rightarrow [-2, 2]$$

$$f(3x-2) \rightarrow D = [-2, 2]$$

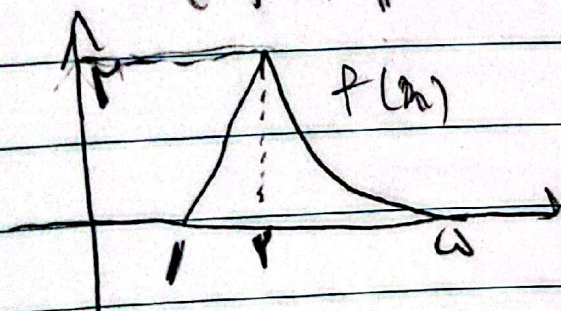
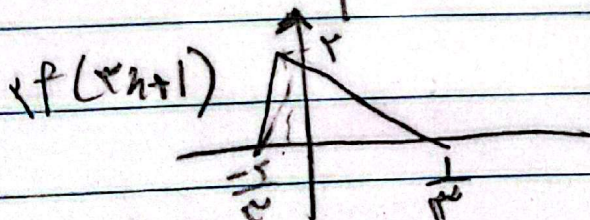
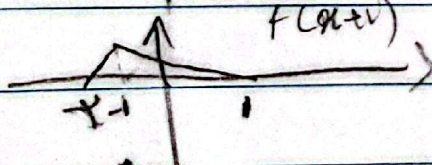
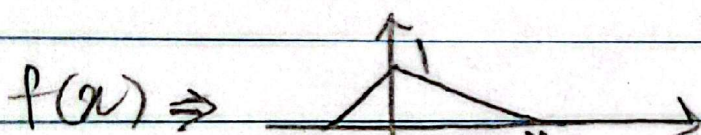
$$[-1, 7]$$

$$f\left(\frac{3x+1}{2}\right) \rightarrow D = [-6, 3] \rightarrow \frac{3(-6)+1}{2} \leq \frac{3x+1}{2} \leq \frac{3(3)+1}{2}$$

$$\rightarrow -1 \leq \frac{3x+1}{2} \leq 5 \rightarrow -1 \leq 2 - \frac{1}{2}x \leq 5 \rightarrow \left[-\frac{5}{2}, \frac{7}{2}\right]$$

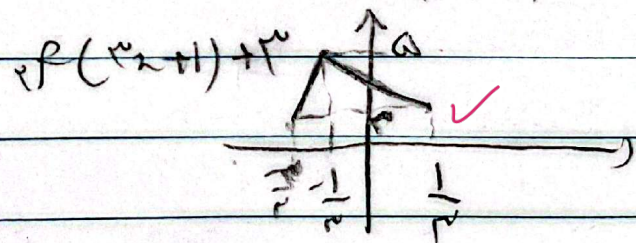
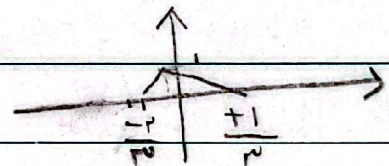
مغفله آف

به جهت برعکس شدن

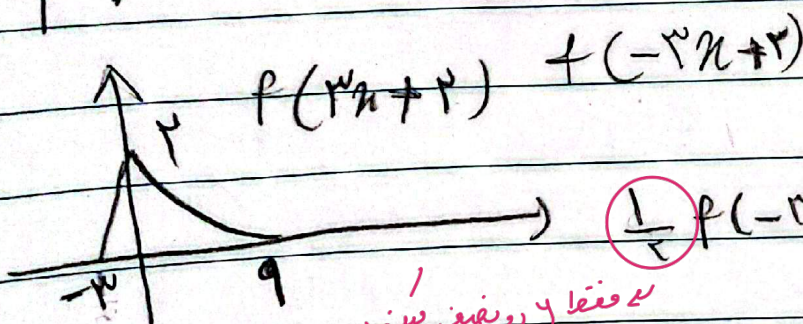
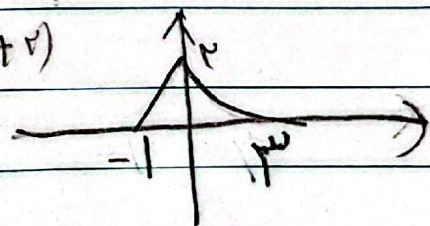


$$2f(3x+1)+3$$

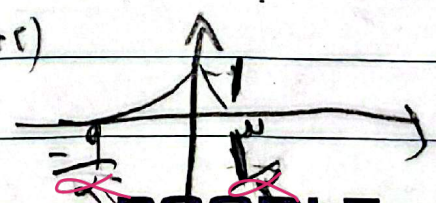
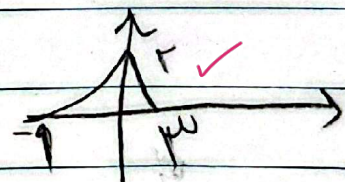
$$f(3x+1)$$



$$f(x+1)$$



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

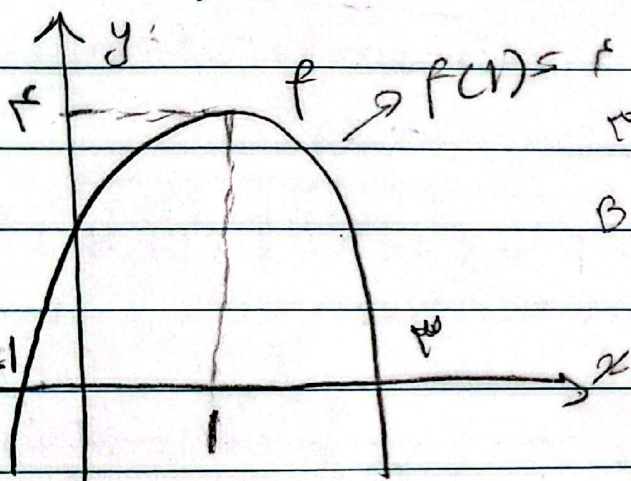


$$y = -\frac{1}{r}x^r + \frac{r}{a}x + 1 \rightarrow \left(\frac{r}{a}, \frac{r+1}{ra}\right)$$

$$y = -\frac{1}{r}(x-r)^r + r = 0$$

$$(x-r)^r \leq r \Rightarrow x=1, x=r$$

$$A(\alpha, \beta) \quad y = 1 - rf(rx + r)$$



$$rx + r = 1 \Rightarrow x = \frac{1-r}{r}$$

$$B = 1 - rf(1) \rightarrow -r$$

$$\alpha = \frac{1-r}{r}, \quad \beta = -r$$

$$\alpha\beta = \frac{1-r}{r} \cdot (-r) = -1$$

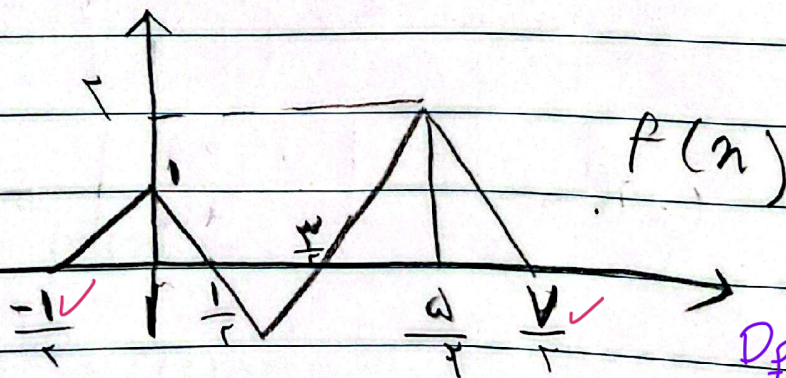
$$D_f = [\alpha, r] \quad D_g = [-1, b]$$

$$y = f(x-1) + g(x+1) \quad D_y = (-r, \omega)$$

$$\alpha \leq x-1 \leq r \Rightarrow \alpha+1 \leq x \leq r+1 \quad \alpha+1 = -r \Rightarrow \alpha = -r-1$$

$$-1 \leq x+1 \leq b \Rightarrow -2 \leq x \leq b-1 \quad b-1 = \alpha \Rightarrow b = \alpha+1 = -r$$

$$a-b = -r-1-(-r) = -1$$



$$D_f = [-\frac{1}{r}, \frac{r}{r}]$$

منفی افد

(10)

$$f(n) = \left| \frac{n+1}{r n + 1} \right| \longrightarrow g(n) = \left| \frac{n-1}{r n - r} \right| + 1 \quad (r)$$

$$n+1 + \left| \frac{n-1}{r n - r} \right| < 0$$

$n+1 + \frac{n-1}{r n - r}$	$n+1 + \frac{1-n}{r n - r}$	$n+1 + \frac{n-1}{r n - r}$
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$$\frac{(r n - r)(n+1) + n-1}{r n - r} < 0 \rightarrow \frac{r n^2 - r}{r n - r} \quad -\sqrt{r} \quad \sqrt{r} \quad \frac{r}{r}$$

$$- \quad | \quad + \quad | \quad + \quad | \quad +$$

$$\frac{(n+1)(r n - r) + 1 - n}{r n - r} < 0 \quad - \quad \frac{1-r\sqrt{r}}{r} \quad \frac{1+r\sqrt{r}}{r} \quad \frac{r}{r}$$

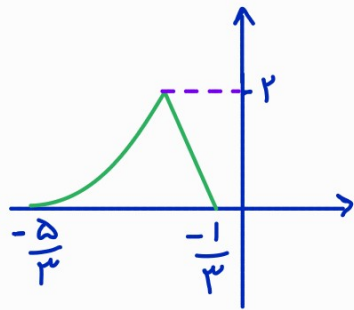
$$- \quad | \quad + \quad | \quad + \quad | \quad +$$

$$\frac{r n^2 - r n - r}{r n - r}$$

$$(-\infty, -\sqrt{r})$$

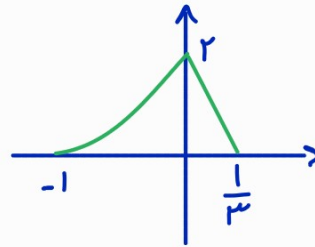
$$D_g = [-1, 2) \rightarrow -1 \leq n < 2 \rightarrow -1 \leq \frac{r_{n+1}}{r} < 2 \Rightarrow D_f = [-1, 2) \quad -3$$

$$-1 \leq 2 - \infty n < 2 \rightarrow -\frac{r}{\infty} \leq n \leq \frac{r}{\infty} \Rightarrow D_{f(2-\infty n)} = \left(-\frac{r}{\infty}, \frac{r}{\infty}\right]$$



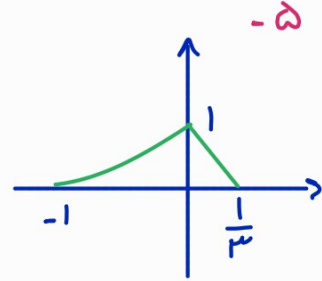
$$y = f(-r_n)$$

واحد به راست



$$y = f\left(-r\left(n - \frac{r}{r}\right)\right)$$

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



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

$$D_{y_1} = [-r, \infty] \rightarrow -r \leq n \leq \infty \rightarrow -\frac{1}{r} \leq \frac{n}{r} + 1 \leq \frac{\infty}{r} \Rightarrow D_f = \left[-\frac{1}{r}, \frac{\infty}{r}\right] \quad -9$$

$$R_{y_1} = [-1, 2] \rightarrow -1 \leq f \leq 2 \rightarrow -\infty \leq rf - r \leq 1 \rightarrow 0 \leq |rf - r| \leq \infty$$

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