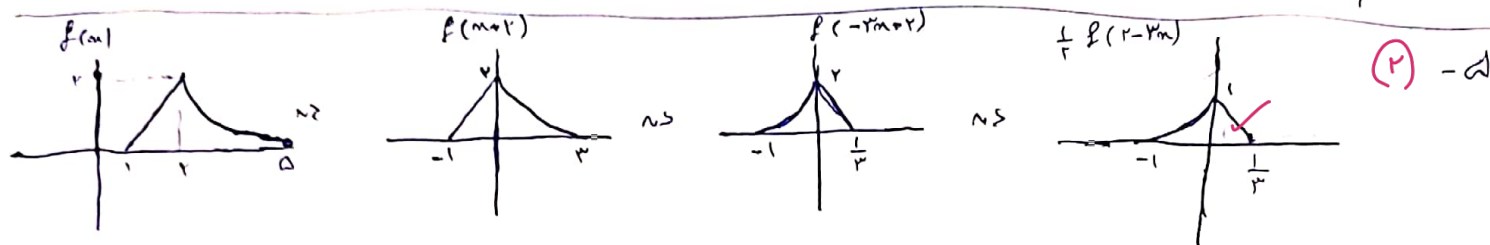
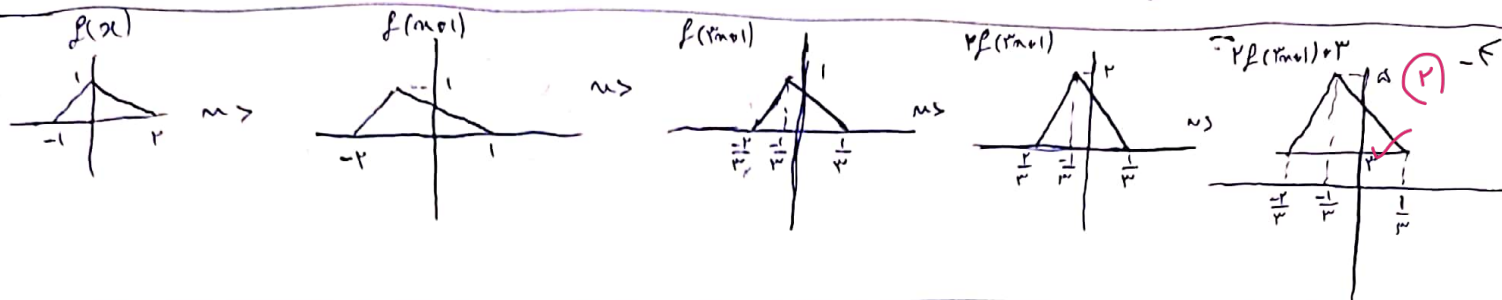


$$Df(m): [-r, r] \leadsto Df\left(\frac{r_m+r}{a}\right) \Rightarrow \left. \begin{aligned} -r \leq \frac{r_m+r}{a} \leq r \\ -1 \leq r_m \leq 1 \end{aligned} \right\} \begin{aligned} -1 \leq r_m \leq 1 \\ -r \leq r_m \leq r \end{aligned} \Rightarrow D: [-r, r] \quad (r) -1$$

$$Df(r_m-r): [-r, r] \leadsto -r \leq r_m \leq r \leadsto -r-r \leq r_m \leq r-r \leadsto -1 \leq r_m \leq 1 \Rightarrow D_f: [-1, 1] \quad (r) -r$$

$$Df\left(\frac{r_m+1}{r}\right): [-1, r] \leadsto -1 \leq r_m \leq r \left\{ \begin{aligned} -r \leq r_m \leq 1 \\ -r \leq r_m+1 \leq 1 \\ -1 \leq \frac{r_m+1}{r} \leq 1 \end{aligned} \right. \leadsto D_f(r_m) : \left\{ \begin{aligned} -1 \leq r-dm \leq 1 \\ -r \leq -dm \leq r \\ -\frac{r}{a} \leq x \leq \frac{r}{a} \end{aligned} \right. \Rightarrow D_f: \left[-\frac{r}{a}, \frac{r}{a} \right] \quad (r) -r$$



$$A: (f, r) \xrightarrow{\text{تحويل}} -\frac{1}{r}(x-f)^r + r = 0 \leadsto x-f = \pm r \Rightarrow x = 1, \quad (r) -r$$

$$x_{\text{ext}}: \frac{r}{a}$$

$$y_{\text{ext}}: \frac{r}{ra}$$

$$x_{\text{ext}}: rx+r=1 \leadsto x = -\frac{1}{r} \quad y_{\text{ext}}: B = 1 - rf(1) \leadsto B = -r \Rightarrow AB = \frac{r}{r} = 1 \quad (r) -r$$

$$Df: (a, f] \leadsto Df(m): (a, d] \leadsto Df(r): (-r, d) = (a, d] \cap [-r, b-1] \quad (r) -1$$

$$Dg: [-1, b) \leadsto Dg(x+1): [-r, b-1] \quad \begin{aligned} a+1 = -r \leadsto a = -r \\ b-1 = d \leadsto b = r \end{aligned} \Rightarrow a-b = -1$$

$$Df\left(\frac{r}{r}+1\right): [-r, d] \leadsto -r \leq x \leq d \leadsto -\frac{r}{r} \leq \frac{r}{r} \leq \frac{d}{r} \leadsto Df\left[\frac{r}{r}+1\right]: \left[-\frac{1}{r}, \frac{d}{r}\right] \quad (r) -r$$

$$Rf\left(\frac{r}{r}+1\right): [-1, r] \leadsto -1 \leq f(m) \leq r \leadsto -r \leq rf(m) \leq r \quad \begin{aligned} -d \leq rf(m) - r \leq 1 \\ 0 \leq |rf(m) - r| \leq d \end{aligned} \Rightarrow 0 \leq \sqrt{|rf(m) - r|} \leq \sqrt{d} \Rightarrow Rf: \sqrt{|rf(m) - r|}: [0, \sqrt{d}] \quad (r) -r$$

$$\left| \frac{x+1}{r_m+1} \right| \xrightarrow{\text{تحويل}} \left| \frac{x-1}{r(x-r)+1} \right| = \left| \frac{x-1}{r_m-r} \right| \xrightarrow{\text{تحويل}} \left| \frac{x-1}{r_m-r} \right| + 1 \leadsto g(m) \quad x: (-\infty, -\sqrt{r}) \quad (r) -1$$

$$\left| \frac{x-1}{r_m-r} \right| + 1 < 0 \quad \left| \frac{x-1}{r_m-r} \right| < -x-1 \quad \left\{ \begin{aligned} -x-1 > 0 \\ x < -1 \end{aligned} \right. \Rightarrow \left\{ \begin{aligned} |x-1| = 1-x \\ |r_m-r| = r-r_m \end{aligned} \right. \Rightarrow \left\{ \begin{aligned} \frac{1-x}{r-r_m} < -x-1 \\ 1-x < (-x-1)(r-r_m) \end{aligned} \right. \Rightarrow \left\{ \begin{aligned} 1-x < r_m-r \\ r_m-r > 1 \\ x > r \end{aligned} \right. \Rightarrow x > \sqrt{r} \quad x < -\sqrt{r}$$