

$$f(m) = \sqrt{1-m^2} \rightarrow D_f = \sqrt{1-m^2} \geq 0 \rightarrow 1-m^2 \geq 0 \rightarrow m^2 \leq 1 \rightarrow -1 \leq m \leq 1$$

$$g = \{(1, 1), (0, 4), (2, 0), (1, 2)\} \rightarrow D_g = \{-1, 0, 2, 1\} \quad D_f \cap D_g = \{1, 0, -1\}$$

$$y_g - x_f = \{(1, 4), (0, 5), (2, 0)\} \rightarrow \{(1, 4), (0, 5), (2, 0)\}$$

$$R_{y_g - x_f} = \{2, 5, 4\} \quad \text{مجموع} \quad 2+5+4=11$$

$$f(m) = m-1 \quad D_f = [1, +\infty)$$

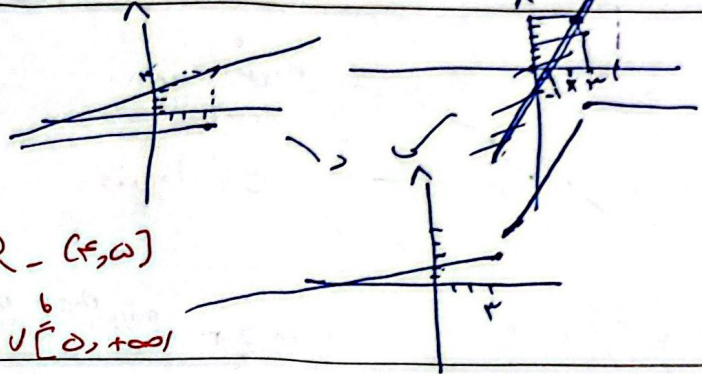
$$g(m) = \frac{1}{m+2} \quad D_g = (-\infty, 2]$$

$$R_f = [0, +\infty)$$

$$R_g = (-\infty, 2]$$

$$R_f \cup R_g = \mathbb{R} - (2, \infty)$$

$$(-\infty, 2] \cup [0, +\infty)$$



$$y = \frac{-m^2}{7} + m + 3 \rightarrow (a, b) \quad y > \frac{3}{7}$$

$$\rightarrow \frac{-m^2}{7} + m + 3 > \frac{3}{7} \xrightarrow{\times 7} -m^2 + 7m + 21 > 3 \xrightarrow{-21} -m^2 + 7m + 18 > 0 \xrightarrow{\times -1} m^2 - 7m - 18 < 0$$

$$b-a = \sqrt{3-(-1)} = \sqrt{4} = 2$$

$$a = -1$$

$$b = 3$$

$$(a, b) = (-1, 3)$$

$$-1 < m < 3$$

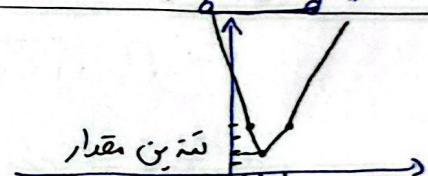
$$(m+1)(m-3) < 0$$

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

$$f(m) = |m-1| + |m-2| + |2m-4|$$

$$\begin{matrix} \swarrow & \swarrow & \swarrow \\ m=1 & m=2 & m=2 \\ 1 & 2 & 2 \end{matrix}$$

$$\begin{matrix} m+1-2 & m+1-2 & m+1-2 & m+1-2 & m+1-2 \\ -m+1 & -m+4 & 2m-2 & 2m-4 & 2m-4 \end{matrix} \rightarrow$$

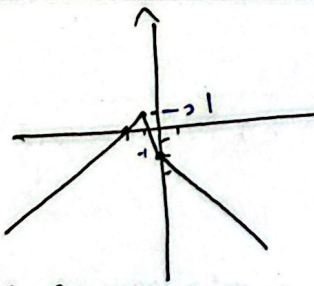


$$2 = \text{تغییر مقدار}$$

$$y = |a| - 2|a+1|$$

$$0 \quad -1$$

$$-1 \quad 0$$



$$R \in (-\infty, +1]$$

$$\begin{matrix} -m+2 & -m+2 & -m+2 & -m+2 & -m+2 \\ m+2 & -m+2 & -m+2 & -m+2 & -m+2 \end{matrix}$$

$$P: (0, 2), (-1, 1)$$

$$y = m \quad |a|=1$$

$$y = 0 \rightarrow m = -2 \quad \text{تغییر مقدار}$$

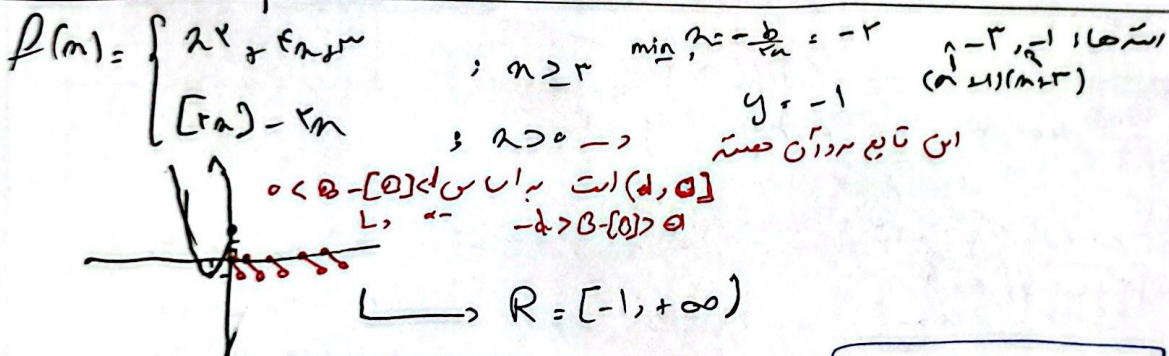
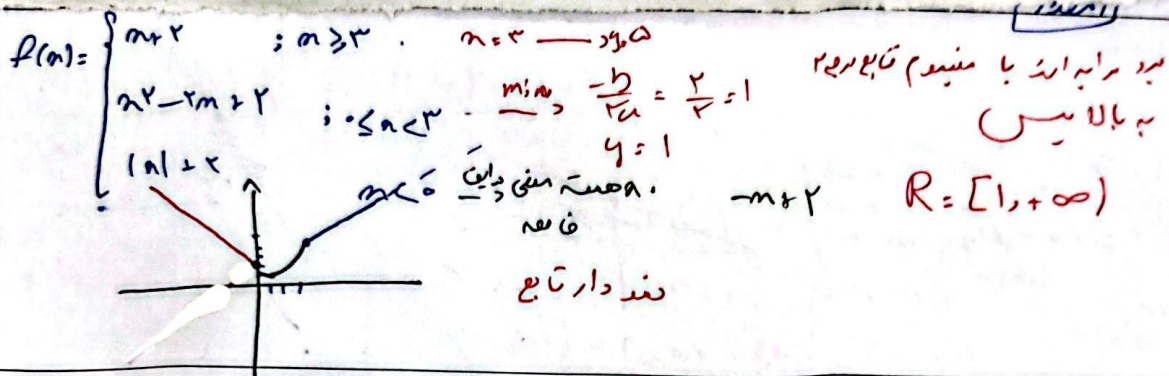
$$y = \frac{x^2 + 0x + m}{x+1} \Rightarrow ny + y = x^2 + 0x + m$$

$$x^2 + 0x + m + ny + m - y = 0 \Rightarrow x^2 + (0-y)x + (m-y) = 0$$

$$x = \frac{-(0-y) \pm \sqrt{(0-y)^2 - 4(m-y)}}{2} \Rightarrow \text{برای اینکه جواب داشته باشد } \Delta \geq 0$$

$$y^2 - 4y - 4m + 4 \geq 0 \Rightarrow y^2 - 4y + 4 \geq 4m \Rightarrow (y-2)^2 \geq 4m$$

$m \leq \frac{(y-2)^2}{4}$



$y = a+1 - \sqrt{2m+3}$ $D_f = [b, +\infty)$ $ab = -\frac{r}{f_1} \times f_1 = -9$

$D_f: \sqrt{2m+3} \geq 0 \Rightarrow 2m+3 \geq 0 \Rightarrow m \geq -\frac{3}{2} \in [-\frac{3}{2}, +\infty)$

$R = (-\infty, a] \Rightarrow$ کتبی مقدار امکان برابر است

$y = a+1 - 0 \Rightarrow$ $a+1 = 0 \Rightarrow a = -1$

$R = (-\infty, a+1]$

$D_f = D_g = [-1, 1]$

$f(m) + g(m) = \sqrt{2+2\sqrt{1-m}} + \sqrt{1-2m+2\sqrt{1-m}} = \sqrt{(1+m) + (1-m)} = \sqrt{2}$

$\sqrt{((1-m)(1+m))} \Rightarrow g(m) = f(m) + g(m) - f(m) = \sqrt{1+m} + \sqrt{1-m} - \sqrt{1-m} = \sqrt{1+m}$

$= \sqrt{1+m} - \sqrt{1-m} = g(m) \Rightarrow y = \frac{f(m) - 2g(m)}{4} = \frac{\sqrt{1+m} + \sqrt{1-m} - 2\sqrt{1-m}}{4} = \frac{\sqrt{1+m} - \sqrt{1-m}}{4}$

$y = \sqrt{1-m}$ $D_g = [-1, 1]$

$D_g = [0, 1]$