

$$-1 \leq \frac{x^2+2}{2} \leq 1 \xrightarrow{\times 2} -2 \leq x^2+2 \leq 2 \Rightarrow -4 \leq x^2 \leq 0 \xrightarrow{x^2 \geq 0} -4 \leq 0 \leq 0$$

$$\Rightarrow D_{f(\frac{x^2+2}{2})} = [-2, 0]$$

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$$\begin{aligned} & [-2, 0] \in x \\ \Rightarrow & \begin{cases} x = -2 \rightarrow \frac{x^2+2}{2} = -1 \\ x = 0 \rightarrow \frac{x^2+2}{2} = 1 \end{cases} \Rightarrow D_{f(x)} = [-1, 1] \end{aligned}$$

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$$x = [-1, 1] \Rightarrow D_{f(x)} = [-1, 1]$$

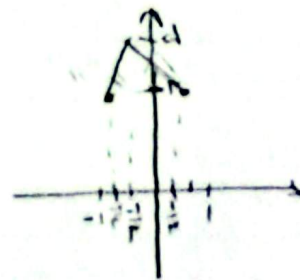
$$-1 \leq 2 - ax < 1 \Rightarrow -1 \leq ax < 1 \xrightarrow{\times \frac{1}{a}} \frac{-1}{a} \leq x < \frac{1}{a}$$

$$\Rightarrow D_{f(2-ax)} = \left(-\frac{1}{a}, \frac{1}{a}\right)$$

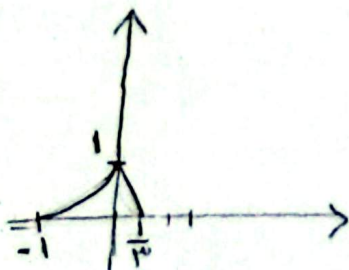
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$$D_{f(x)} = [-1, 1] \Rightarrow -1 \leq \frac{x^2}{2} \leq 1 \Rightarrow \frac{-2}{2} \leq x \leq \frac{2}{2}$$

$$R_{f(x)} = [0, 1] \Rightarrow R_{f(x+1)+2} = [2, 3]$$



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$$1 \leq 2 - \frac{x^2}{2} \leq 2 \xrightarrow{\times -1} -1 \leq \frac{x^2}{2} \leq 0 \xrightarrow{\times 2} -2 \leq x^2 \leq 0 \Rightarrow \left[\frac{-2}{2} \leq x \leq \frac{0}{2} \right] = [0, 1]$$

$$R_{f(x+1)} = [0, 1]$$

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$$x_5 = \frac{-b}{r_a} = \frac{-\frac{1}{a}}{\frac{1}{a}} = \frac{1}{a}$$

$$y = \frac{1}{r} \left(x - \frac{w}{a} \right)^r + \frac{rA}{rA} \xrightarrow{y' = y + \frac{rV}{rA}} y^* = \frac{1}{r} \left(x - \frac{w}{a} \right)^r + w \xrightarrow{y^{**} = y^* + \frac{rV}{rA}} \frac{1}{r} \left(x - \frac{w}{a} \right)^r + r_0$$

$$\rightarrow (x - f)^2 = 9 \rightarrow |x - f| = 3 \rightarrow \begin{matrix} x - f = 3 \rightarrow x = 6 \\ x - f = -3 \rightarrow x = 1 \end{matrix}$$

$$1/f \rightarrow \begin{cases} u_x + v = 1 \rightarrow x = \frac{1}{f} = \alpha \\ -v(f) + 1 \rightarrow y = -v = \beta \Rightarrow \alpha \beta = \frac{x}{v} \end{cases}$$

$$a < x-1 < f \Rightarrow a+1 < x \leq a \quad (1) \quad , \quad -1 \leq x+1 < b \Rightarrow -2 \leq x < b-1 \quad (2)$$

$$\begin{aligned} \textcircled{1} \textcircled{2} \rightarrow (-4, 1) &\Rightarrow b-1=1 \Rightarrow b=2 \\ &\quad a+1=-2 \Rightarrow a=-3 \Rightarrow a-b = -3-2 = -5 \end{aligned}$$

$$|2f(x) - 3| \geq 0 \quad \text{هو، انبار}$$

$$Df_{\left(\frac{\alpha}{\gamma}+1\right)} = [-\mu, 0] \rightarrow Df_{f_{\alpha}} = \left[-\frac{1}{\gamma}, \frac{\gamma}{\gamma}\right]$$

$$R_{f(\frac{2}{r+1})} = [-1, 2] \rightarrow R_{f(n)} = [-1, 1] \xrightarrow{\text{دایره ی سبز}} [1, 1] \xrightarrow{\text{دایره ی آبی}} [1, \sqrt{2}]$$

$$\begin{aligned} \left| \frac{x-1}{x-2} \right| + 1 &= g(x) \Rightarrow g(x) = \left| \frac{x-1}{x-2} \right| + 1 \quad g(x) + x < \Rightarrow \left| \frac{x-1}{x-2} \right| + 1 + x < \\ \Rightarrow x+1 < 0 &\Rightarrow x < -1 \quad \Rightarrow \frac{x-1}{x-2} \rightarrow \frac{x-1}{x-2} + x+1 < \quad \rightarrow \frac{x-1 + x^2 - 2x + x^2 - 2x + 2}{x-2} < \\ \Rightarrow \frac{x^2 - 3x + 1}{x-2} &< 0 \quad \xrightarrow{-\sqrt{5}} \quad \frac{-\sqrt{5}}{-1} < \Rightarrow (-\infty, \sqrt{5}) \end{aligned}$$