

SUBJECT:

DATA:

NUMBER:

میدان خطی

$$y = -\frac{1}{2}(x - x_0) + y_0 \xrightarrow{(x, y)} y = -\frac{1}{2}(x - 1) + 3 \quad (1)$$

$$5 \quad y = 0 \rightarrow -\frac{1}{2}(x - 1) + 3 = 0 \rightarrow (x - 1)^2 = 9 \rightarrow x - 1 = 3 \quad \left. \begin{array}{l} x - 1 = 3 \\ x - 1 = -3 \end{array} \right\} \begin{array}{l} x = 4 \\ x = -2 \end{array}$$

$$f \text{ در } x_0 \rightarrow (1, 3) \xrightarrow{f(x+2)} (-1, 3) \xrightarrow{f(x+2)} \left(-\frac{1}{2}, 3\right) \quad (2)$$

$$\xrightarrow{-2f(x+2)} \left(-\frac{1}{2}, -1\right) \xrightarrow{1-2f(x+2)} \left(-\frac{1}{2}, -3\right) \quad \alpha, \beta = \frac{V}{2}$$

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(3)

$$y = 3 - \sqrt{2x} \xrightarrow{\text{میدان مثبت}} y = 3 - \sqrt{2x+2} \xrightarrow{\text{قرینه نسبت}} -3 + \sqrt{2x+2}$$

$$y \xrightarrow{\text{میدان مثبت}} \sqrt{2x+2} + 2 \xrightarrow{\text{نقطه برقرار}} \sqrt{2x+2} + 2 = \frac{V}{2}$$

$$\xrightarrow{\sqrt{2x+2} = \frac{V}{2}} \xrightarrow{2 \text{ طرف}} 2x+2 = \frac{V^2}{4} \rightarrow \boxed{x = \frac{1}{2}}$$

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$$f(x) \rightarrow x \in \mathbb{R} \rightarrow -3 \leq x \leq 4 \rightarrow a = -3 \quad (4)$$

$$g(x) \rightarrow x \in \mathbb{R} \rightarrow -1 \leq x \leq 4 \rightarrow b = 4 \quad \left. \begin{array}{l} a = -3 \\ b = 4 \end{array} \right\} a - b = -9$$

$$20 \quad y = \sqrt{1 + 2f(x) - 2} \rightarrow \text{تغییر متغیر} \rightarrow D_y = D_{f(x)} \quad (5)$$

$$y_1 = f\left(\frac{x}{2} + 1\right) \rightarrow D_f = [-2, 5] \xrightarrow{Df} -\frac{1}{2} \leq \frac{x}{2} \leq \frac{5}{2} \rightarrow -1 \leq \frac{x}{2} + 1 \leq \frac{5}{2}$$

$$\rightarrow Df = \left[-\frac{1}{2}, \frac{5}{2}\right] \rightarrow Dy_1 = \left[-\frac{1}{2}, \frac{5}{2}\right] / (y, x) \rightarrow 5 \leq y - 2 \leq 1 \quad ||$$

$$25 \quad \rightarrow 1 \leq y - 2 \leq 5 \xrightarrow{\sqrt{}} R_f = [1, \sqrt{5}]$$

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$$y = \frac{m}{a} [am] \rightarrow 0 < am < 1 \xrightarrow{y=0} \frac{1}{a} < m < 0 \quad a < 0 \quad (4)$$

$$1 < am < 2 \rightarrow \frac{1}{a} < m < \frac{1}{a} \quad y = \frac{m}{a} \quad [am] = 1$$

$$5 \quad y = \frac{m}{-r} [-rm] \quad b = 2 \times \frac{1}{r} = 1 \quad A(\frac{1}{a}, \frac{1}{r}) \rightarrow a = r \rightarrow a = -r$$

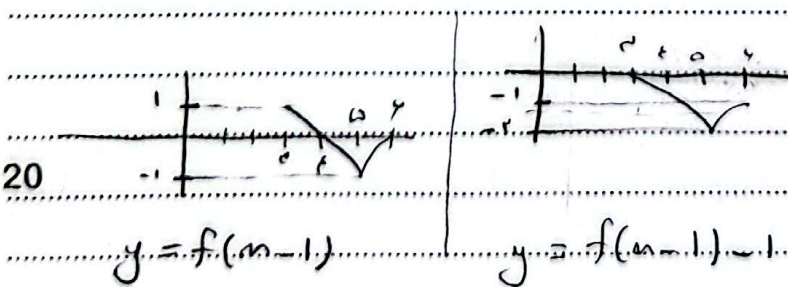
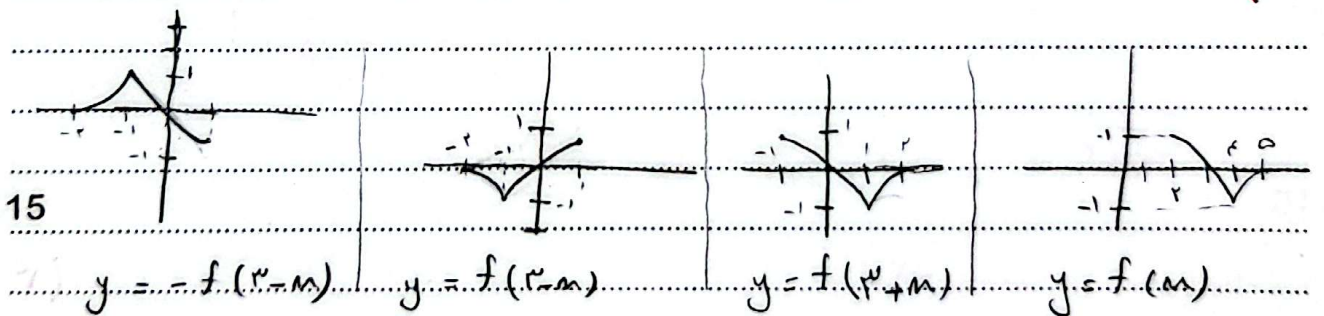
تغییر در $\frac{1}{r}$

$$b - a = r$$

$$f = \log_r m \xrightarrow{\text{تغییر در } r} y = \log_r m+r \xrightarrow{\text{تغییر در } m} \bar{y} = -\log_r m+r \quad (v)$$

$$\forall b, m, r \quad y = r = \log_r m+r \xrightarrow{\text{تغییر در } m} g = r - \log_r m+r$$

$$10 \quad g(-1, r) = r - \log_r 1 = r - 0 = r \quad \bar{y} = 1 - r = -r$$
$$g(-4, r) = r - \log_r 4 = r - 2 = r - 2$$



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$$f(x) = \left| \frac{x-1}{x-2} \right| + 1 \quad (9)$$

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

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

$$② \frac{x-1}{x-2} > x+1 \rightarrow \frac{-x^2 - 2x - 2}{x-2} > 0 \rightarrow \frac{-x^2 - 2x - 2}{x-2} > 0$$

$$① \cap ② \rightarrow x \in (-\infty, -\sqrt{2})$$

$$f(x) = (x-2)^2 + 2V \quad g(x) = \sqrt{f(x)(f(x)-2A)} \quad (10)$$

$$f(x) = 0 \rightarrow (x-2)^2 + 2V = 0 \rightarrow (x-2)^2 = -2V \rightarrow x-2 = -\sqrt{-2V} \rightarrow x = 2 - \sqrt{-2V}$$

$$f(x) = 2A \rightarrow (x-2)^2 + 2V = 2A \rightarrow (x-2)^2 = 2A - 2V \rightarrow x-2 = \sqrt{2A - 2V} \rightarrow x = 2 + \sqrt{2A - 2V}$$

$$15 \text{ } \Rightarrow \frac{-1}{-1+1-} \rightarrow Dg = [-1, 3] \rightarrow \frac{-1, 0, 1, 2, 3}{\text{...}}$$

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