

بنیاد

تکلیف شماره ۱۵

کتاب معارف سب

$$n=1 \rightarrow F(1) + F(1) = 1 + F(1) \quad (1) \quad f(1)=1 \quad (f(x) \neq a+b)$$

$$n=2 \rightarrow F(1) + f(2) = 1 + 3 \rightarrow a+b + 2a+b = 3 \rightarrow 3a+2b=3 \quad (2)$$

$$(1) \rightarrow 3a+b=3 \quad (2) \rightarrow 3a+2b=3 \rightarrow b=0, a=1 \rightarrow f(x)=x$$

$$y = \sqrt{-x^2 + x} \rightarrow \text{معرکه } x = \frac{-1}{-2} = \frac{1}{2} \rightarrow y = \sqrt{-\frac{1}{4} + \frac{1}{2}} = \frac{1}{2} \rightarrow R_f = [0, \frac{1}{2}]$$

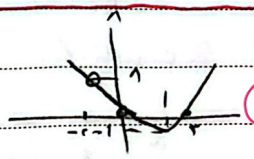
$$F(x) = \frac{x(x-2)(x+2)}{x^2-2} \rightarrow x \neq -2, f(x) = x^2 - 2$$

$$\rightarrow R_f = [-2, +\infty) - \{-2\} \rightarrow C = -1$$

$$\rightarrow D_f = R - \{-2\} \rightarrow a = b = -2 \rightarrow f\left(\frac{-2-2}{2(-1)}\right) = f(2) = 0$$

$$x^2 - 2x = 1 \rightarrow x^2 - 2x - 1 = 0 \quad x=2 \quad a=2$$

$$x=-2 \quad b=-2 \rightarrow f\left(\frac{2-2}{2(-1)}\right) = f(-1) = 3$$



$$y = \sqrt[3]{(x-2)^3} \rightarrow y = \sqrt[3]{x^3 - 6x^2 + 12x - 8}$$

$$a = -2 \rightarrow D_f = [-2, 12] \rightarrow -2 \leq x \leq 12 \rightarrow -4 \leq (x-2) \leq 10 \rightarrow R_f = [-1, 10]$$

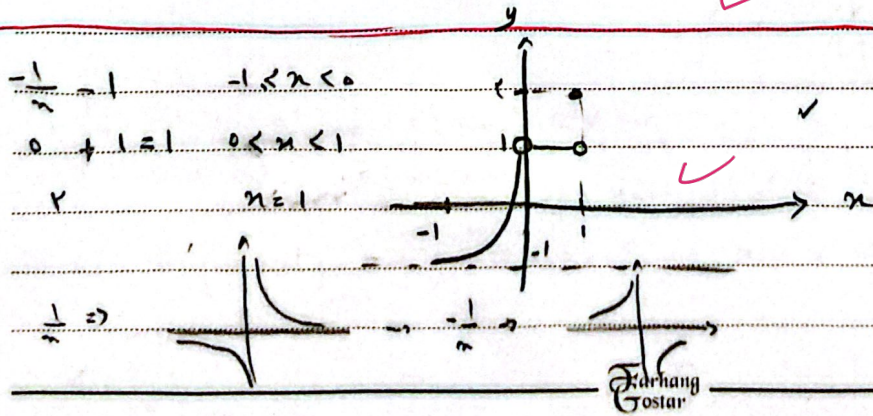
$$y = \sqrt[3]{(x-2)^3}$$

$$Dy_1 = \left(\frac{x+1}{1-x}\right) > 0 \rightarrow \frac{-1}{-1+1} \rightarrow D_f = [-1, 1]$$

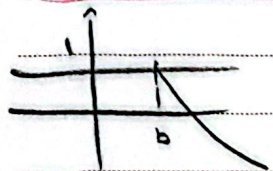
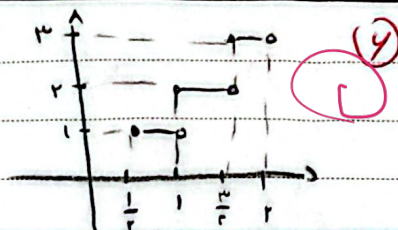
$$\frac{ax^2-1}{x^2+b} = y \rightarrow x^2 = \frac{yb+1}{y-a}$$

با توجه به اینکه جواب x حقیقی داشته باشد، $R_f = [-1, 1]$ است و ضابطه $\frac{yb+1}{y-a}$ باید مثبت باشد.

در این صورت $a=1$ و $b=1$ $\rightarrow a+b=2$ ✓



$$y = \begin{cases} 0+1=1 & \frac{1}{2} \leq x < 1 \\ 1+1=2 & 1 \leq x < \frac{3}{2} \\ 1+2=3 & \frac{3}{2} \leq x < 2 \end{cases}$$



میزان مثل

$$|n+1| = 1 \rightarrow |n+1| = |n+3|$$

$$|a+n| \quad |c| < |d| \rightarrow (c-d)(c+d) < 0$$

میزان

$$n^2 + 2n + 1 = a^2 n^2 + 4an + 9 \quad a=1 \quad (x+2)(x-2) < 0$$

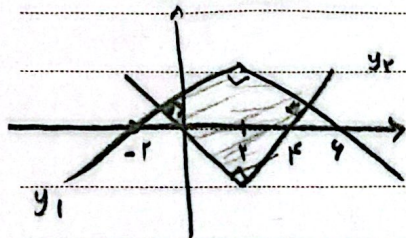
$$\rightarrow (a^2-1)n^2 + (4a-2)n + 8 = 0 \quad \frac{n=b}{y=1} \rightarrow (a^2-1)b^2 + (4a-2)b + 8 = 0 \rightarrow x > -2$$

$$\rightarrow (ab)^2 + 4ab + 9 = (b^2 + 2b + 1)c = 0 \rightarrow (ab+3) = (b+1) \rightarrow ab-b = -2 \quad b(a-1) = -2$$

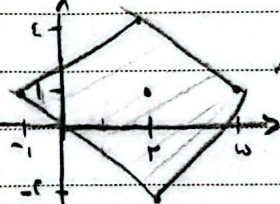
$$|y-1| = 3 - |x-2| \rightarrow y-1 = \pm (3 - |x-2|)$$

$$\rightarrow y = \pm (3 - |x-2|) + 1 \rightarrow y_1 = 4 - |x-2| \quad y_2 = |x-2| - 2$$

$$y_1 \rightarrow \begin{cases} 4+x-2=x+2 \\ 4-x-2=-x+2 \end{cases} \quad y_2 \rightarrow \begin{cases} -x+2-2=-x \\ x-2-2=x-4 \end{cases}$$



میزان

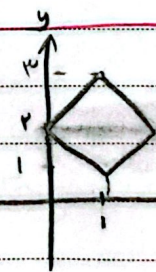


$$|x-1| + |y-2| = 1$$

اینکه هم در هر دو طرف و هم در هر دو طرف

و در هر دو طرف و در هر دو طرف

$$x=1 \rightarrow |y-2| - |x-1| = 1$$



$$-\frac{b}{a}$$

$$3n - an - b \quad 3n + an + b$$

$$(3-a)n - b \quad (3+a)n + b$$

میزان

$$(3-a)(3+a) > 0$$

میزان

$$-1 < a < 1$$

$$\rightarrow -1 < a < 1$$

با توجه به اینکه در هر دو طرف و در هر دو طرف

