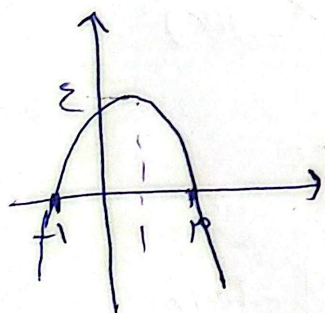


$$g = -\frac{1}{10}x^2 + \frac{1}{5}x + 1$$

$$g_1 = -\frac{1}{10}(x-1)^2 + 1 = -\frac{1}{10}x^2 + \frac{1}{5}x - \frac{1}{10} + 1 = -\frac{1}{10}x^2 + \frac{1}{5}x - \frac{9}{10}$$

$$x=1, \checkmark$$



$$10x+2=1$$

$$x = -\frac{1}{10} = \alpha$$

$$1 - 2f(1) = 1 - 1 = -1 = \beta$$

$$\alpha\beta = \left(-\frac{1}{10}\right)(-1) = \frac{1}{10}$$

$$10 - \sqrt{2x} \xrightarrow{\text{از دو طرف مینویسیم}} 10 - \sqrt{2(x+1)} \xrightarrow{\text{هر دو طرف را به توان ۲ می‌رسانیم}} \sqrt{2x+2} - 10 \xrightarrow{\text{از دو طرف ۱۰ اضافه می‌کنیم}} \sqrt{2x+2} + 10$$

$$\sqrt{2x+2} + 10 = \frac{9}{2}$$

$$2x+2 = \frac{81}{4}$$

$$x = \frac{1}{8}$$

$$D_f = (a, 2] \quad D_g = [-1, b) \quad g = f(x-1) + g(x+1) \quad (-5, 5)$$

$a, b \leq 9$

$$a \leq x-1 \leq 2 \Rightarrow a+1 \leq x \leq 3$$

$$-1 \leq x+1 < b \Rightarrow -2 \leq x < b-1$$

$$b=9 \quad c=b-1=8$$

$$a=-2 \quad d=a+1=-1$$

$$9+2=11$$

$$g_1 = f\left(\frac{x}{2}+1\right)$$

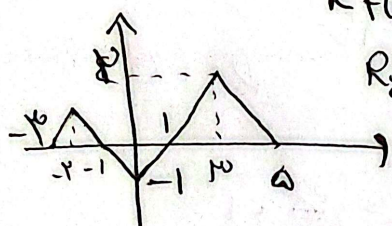
$$g_2 = \sqrt{12f(x)-3}$$

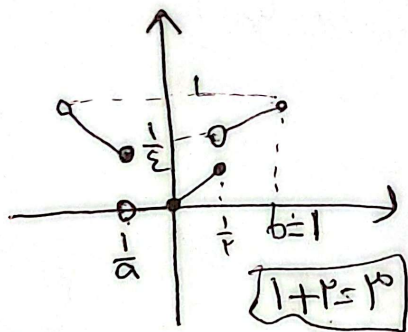
$$D_{g_2} = D_f = \left[-\frac{3}{12}+1, \frac{3}{12}+1\right]$$

$$= \left[-\frac{1}{4}, \frac{1}{4}\right]$$

$$R_f\left(\frac{x}{2}+1\right) = R_f(x)$$

$$R_{g_2} = \sqrt{12R-3} = \sqrt{[1, 5]} = [1, \sqrt{5}]$$





$$\frac{x}{a} [ax]$$

$$0 < ax < 1 \Rightarrow 0 > x > \frac{1}{a}$$

$$\frac{1}{a} [a(\frac{1}{a})] = \frac{1}{a^2} = \frac{1}{\epsilon} \Rightarrow a^2 = \epsilon \Rightarrow a = \sqrt{\epsilon}$$

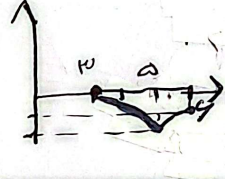
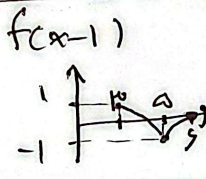
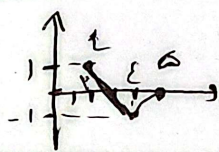
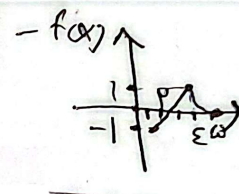
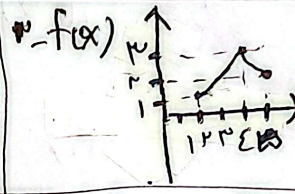
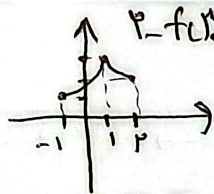
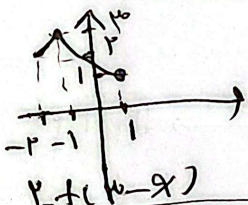
$$-\frac{x}{a} [-ax]$$

$$-1 < -ax < -1 \Rightarrow 1 > x > \frac{1}{p} \Rightarrow b \leq 1$$

$$f(x) = \log_p x \rightarrow f(x+p) = \log_p(x+p) \rightarrow -f(x+p) = -\log_p(x+p)$$

$$\rightarrow p - f(x+p) = p - \log_p(x+p) \rightarrow p - f(-x+p) = p - \log_p(p-x) = g(x)$$

$$p - \log_p \frac{1}{\epsilon} + p - \log_p \frac{1}{\epsilon} = p - \epsilon - p = -\epsilon$$



$$\left| \frac{x+1}{px+1} \right| < \frac{1}{p} \rightarrow \left| \frac{x-1}{px-p} \right| < \frac{1}{p} \rightarrow \left| \frac{x-1}{px-p} \right| + 1$$

$$x+1 - \frac{x-1}{px-p} < 0$$

$$x+1 + \left| \frac{x-1}{px-p} \right| < 0$$

$$x+1 + \frac{x-1}{px-p} < 0$$

$$(-\infty, -\sqrt{p}) \cup (-\sqrt{p}, \sqrt{p})$$

$$(x-a)^p + b > 2$$

$$-a^p + b > 0$$

$$b > a^p$$

$$g(x) = \sqrt{(1-f(x)) - f(x)}$$

$$0 < f(x) < 1$$

$$(x-a)^p + a^p = 2$$

$$(p-a)^p + a^p = p^p$$

$$1 - a^p - 1/p + 1/a^p = p^p$$

$$9a^p - 1/p - 1/a = 0$$

$$9(a^p - p a + 1) - p a = 0$$

$$9(a-1)^p = p a \quad a = \sqrt[p]{\frac{p}{9}} + 1$$

$$D_2 = \{1, 2, 3\}$$