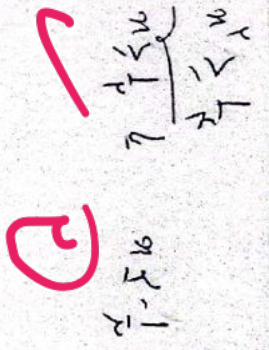


$$f(x) = \sqrt{x - \frac{1}{x}}$$

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

$$D_f = (-\infty, -1] \cup [1, \infty)$$



$$f(x) = \sqrt{m x^r + r m x + 1} \rightarrow m x^r + r m x + 1 \geq 0$$

$$\frac{1}{x + \phi} - \frac{1}{x - \phi} = 1$$

$$\Delta < 0 \rightarrow (r m)^r - r(m)(1) \leq 0$$

$$r m \int_{m=0}^{m=1} \rightarrow [0, 1]$$

$$f(x) = \int \frac{r a x^r - 1}{r x^{r+1}} \rightarrow x \neq a$$

$$r x + k \rightarrow x = \frac{1}{r}$$

$$r x - 1 = r a - 1 = 0 \rightarrow a = \frac{1}{r}$$

$$g(x) = r x + 1$$

$$r x + k = r x + 1$$

$$r + k = r$$

$$k = 0$$

$$f(x) = \int \frac{q x^r - c}{r a x + r}$$

$$x \neq -\frac{c}{r}$$

$$r a x + r$$

$$\frac{q x^r - c}{r a x + r} \Rightarrow r a x + b \rightarrow (r a x + b)(r a x + r) = q x^r - c$$

$$g(x) = r a x + b \rightarrow x = -\frac{c}{r}$$

$$r a x + r = r a x + b \rightarrow r a x = b - r$$

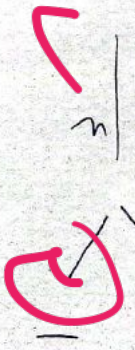
$$x = \frac{b - r}{r a}$$

$$f(x) = \begin{cases} \frac{x^r - c}{r a x + r} & x \neq \frac{1}{r} \\ r a x + r a x & x = \frac{1}{r} \end{cases}$$

$$r a x + r a x = a x + r \rightarrow r a x + r a x = a x + r$$

$$\rightarrow r a x + r a x = 0 \quad \Delta = b^2 - 4 a c \rightarrow r - c(r) (-c) = r^2 c$$

$$a = \frac{-b \pm \sqrt{\Delta}}{r a} \rightarrow -\frac{r \pm \sqrt{r^2 c}}{r a}$$



$$f(x) = \begin{cases} x^r + rx & x > a \\ ax - r & x < a \end{cases} \rightarrow a^r + r(a) \quad a^r + ra = a^r - r \text{ (دیرجی، لیس) } \\ \rightarrow a^r - r$$

دیرجی

$$\begin{cases} a^r - r \\ a = -r \end{cases} \quad \text{D}$$

$$f(x) = rx + b \quad f(a) = \frac{a^r + a}{r a - b}$$

$$f(r) = r = r(r) + b \quad f(r) = r = \frac{r + a}{r - b} \Rightarrow |a = r + a \\ a = 11$$

$$f(x) = \frac{a^r + 11}{r a + 1} \Rightarrow f(1) = \frac{1+11}{r+1} = \frac{1r}{r} = r \quad \text{D}$$

$$f(a) = \frac{r^a + 1}{r a^r + a a + b} \rightarrow r a^r + a a + b \neq 0 \quad (r^p)$$

$$x = -1 \rightarrow r(-1)^r + a(-1) + b = 0 \rightarrow r - a + b = 0 \\ x = r \rightarrow r(r)^r + a(r) + b = 0 \rightarrow r^r + r a + b = 0$$

$$f(x) = \frac{r a + 1}{r a^r - a a - 1} \rightarrow f(1) = \frac{r(1) + 1}{r(1)^r - a(1) - 1} = \frac{-a}{1r} \quad \text{D} \\ \begin{cases} -r + a - b = 0 \\ r^r + r a + b = 0 \end{cases} \\ \begin{cases} r_0 = -a \\ a = -r \\ b = 1 \end{cases}$$

$$f(x) = \frac{r a^r - \sqrt{r}}{-r a^r + a a + b} \quad D_f = R - \{ -1 \} \rightarrow -(r a + 1)^r = a^r = -1 \Rightarrow -(r-1) \pm r = 0$$

$$\rightarrow -r a^r + a a + b \rightarrow -(r a^r + r a^r + r^r) = -r a^r - r a^r - r^r = -r a^r + a a + b \quad K = r \\ K = r \rightarrow -r a^r - 1 a a - r = -r a^r + a a + b$$

$$b = -r \rightarrow a = -1 \quad b + a = -1r \quad \text{D}$$

$$x = -1 \rightarrow -r a^r + a a + b = 0 \rightarrow -r(-1)^r + b = 0 \rightarrow -r - a + b = 0 \quad b = a - r$$

$$f(a) = \frac{r a}{(a-1)(r a^r + a a + 1)} \quad D_f = R - \{ 1 \} \quad \text{D}$$

$$x = 1 \rightarrow (x^r + m x + 1) = 0 \rightarrow 1 + m + 1 = 0 \Rightarrow m = -2$$

$$\Delta = b^r - r a c = 0 \Rightarrow m^r - r(1)(1) = m^r - r < 0 \\ m^r < r \quad -r < m < r \quad \text{D}$$