

۱۴/۲۵

سری

دامنه تقریب: $y = \sqrt{x^2 f(x+1)}$

(۲)

$$f(x) = \left(\frac{1}{x}\right)^{x-2} - 1$$

$$f(x+1) = \left(\frac{1}{x+1}\right)^{x-1} - 1$$

$$f(x+1) = 0 \rightarrow x = 1$$

$$-\frac{1}{x} + \frac{1}{x} = 0$$

$$D = [0, 1] \checkmark$$

$$f(x) = \sqrt{x + |x+2|}$$

$$D_{f(-x)} = ?$$

(۲)

$$f(-x) = \sqrt{-x + |-x+2|}$$

$$x > 2 \rightarrow -x + 2 < 0$$

$$x < 2 \rightarrow -x + 2 > 0$$

$$\left. \begin{array}{l} x < 2 \\ -x + 2 \geq 0 \end{array} \right\} \rightarrow D_{f(-x)} = (-\infty, 2] \checkmark$$

تعداد

(۱) دامنه: $y = \sqrt{\frac{x-1}{f(x)}}$

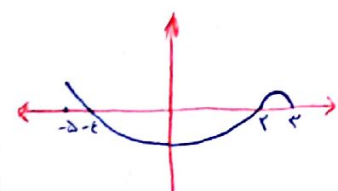
* حتماً واسه حل این سوالات

باید ریشه های صورت و مخرج

$$\Rightarrow D = (-4, 0] \cup \{1\} \cup (2, 3)$$

$$(-4, 1]$$

را حسب ریشه ها و جدول تعیین علامت بنویس



$$\frac{x-1}{f(x)} \geq 0 \rightarrow \begin{array}{l} \text{هر دو مثبت} \Rightarrow (2, 3) \\ \text{هر دو منفی} \Rightarrow (-4, 0] \end{array}$$

$$\Rightarrow \{1\} \text{ صورت صفر}$$

-5	-4	-1	2	3
+	-	+	-	+

$$y = \frac{1}{9x^4 - 7x^2 - 4x - 3} \quad \text{دامنه برابر} \quad y_2 = \frac{1}{3x^2 + ax + b}$$

$$\sqrt{-a-b} = ?$$

۵

ریشه مخرج برابر دامنه برابر

یادداشت...

$$f(x) = x^3 + x$$

$$y = \sqrt{f(x) - f\left(\frac{x}{2}\right)} \text{ دامنه}$$

(۱, ۵)

$$\hookrightarrow \sqrt{x^3 + x - \frac{4x}{x^2} - \frac{x}{x}} = \sqrt{x^3 + x - \frac{4x}{x^2} - \frac{x}{x}}$$

$$[-2, 0] \quad D = (-\infty, -2] \cup [x, +\infty)$$

$$\hookrightarrow x^3 + x - \frac{4x}{x^2} - \frac{x}{x} \geq 0$$

$$x^3 + x \geq \frac{4x}{x^2} + \frac{x}{x}$$

$$x - \frac{4}{x} \geq 0 \rightarrow \frac{x^2 - 4}{x}$$

$$\leftarrow x \geq \frac{4}{x} \rightarrow x \geq 2 \quad x^2 \geq 4 \rightarrow x \leq -2$$

-2	0	2
-	+	-

$$f(u^2+u) = u^2-1$$

$$f(u)+f(u)=?$$

$$1+u=\Lambda$$

$$u=1 \rightarrow f(u) = 1-1=0$$

$$u=2 \rightarrow f(u) = 4-1=3 \quad \checkmark$$

$$\frac{g(\sqrt{v}-r)}{f(\sqrt{v}+r)} = \frac{(\sqrt{v}-r, r)^2 - rv}{(\sqrt{v}+r, r)^2 + \Lambda} = \frac{-r_0}{1_0} = -r \quad \checkmark$$

$$\begin{aligned} f(u) &= u^2 - 4u^2 + 12u & g(u) &= u^2 + 9u^2 + 12u \\ f(u) &= u^2 - 4u^2 + 12u - \Lambda + \Lambda & g(u) &= u^2 + 9u^2 + 12u + rv - rv \\ f(u) &= (u-r)^2 + \Lambda & g(u) &= (u+r)^2 - rv \end{aligned}$$

(2)

$$f(u) = \sqrt{u + \varepsilon \sqrt{u - \varepsilon}} \quad g(u) = \sqrt{u - \varepsilon \sqrt{u - \varepsilon}}$$

$$u \geq \varepsilon \rightarrow f(u) + g(u) = a + b \sqrt{u - \varepsilon}$$

$$\frac{a+b}{c} = \frac{a+b}{\varepsilon}$$

$$(1, \sqrt{\varepsilon}) \rightarrow z = \frac{1}{r}$$

$$\begin{aligned} f(u) &= u + \varepsilon \sqrt{u - \varepsilon} \\ g(u) &= u - \varepsilon \sqrt{u - \varepsilon} \end{aligned} \quad \left\{ \begin{aligned} f(u) + g(u) &= 2u \end{aligned} \right.$$

$$f(u)g(u) = \sqrt{u + \varepsilon \sqrt{u - \varepsilon}} \times \sqrt{u - \varepsilon \sqrt{u - \varepsilon}} = \sqrt{u^2 - \varepsilon^2} = |u - \varepsilon| = u - \varepsilon$$

وقت!

$$\begin{aligned} a &= 0 \\ b &= \varepsilon \\ c &= \varepsilon \end{aligned}$$

$$\rightarrow f(u) + g(u) + \varepsilon f(u)g(u) = \varepsilon u + 14 = (f(u) + g(u))^2 \rightarrow f(u) + g(u) = \sqrt{\varepsilon u + 14} = \varepsilon \sqrt{u + \varepsilon}$$

$$f(u) = \frac{u + \varepsilon}{u^2 - \varepsilon u + \varepsilon^2}$$

$$g(u) = \left\{ (r, 1), (1, 0), (r, \omega), (0, \varepsilon) \right\}$$

$$\frac{g}{f} = \left\{ (0, 1), (r, \frac{1}{\varepsilon}) \right\}$$

(2)

$$f(r) = -\varepsilon$$

$$g(r) = 1$$

$$f(0) = \frac{\varepsilon}{r}$$

$$g(0) = \varepsilon$$

$$f(u) = \left\{ (r, 1), (r, -1), (\varepsilon, r), (-1, r) \right\}$$

$$g(u) = \left\{ (-r, r), (1, -1), (r, r), (-1, 0) \right\}$$

(2)

$$f(ru) = \left\{ (\frac{1}{r}, r), (\frac{r}{r}, -1), (r, r), (\frac{1}{r}, r) \right\} \quad \checkmark$$

$$rg^2(ru) + 1 = \left\{ (-r, 19), (1, r), (r, 9), (-1, 1) \right\} \quad \checkmark$$

$$f(u^2) = \left\{ (1, r), (-1, r), (\sqrt{r}, -1), (-\sqrt{r}, -1), (r, r), (-r, r) \right\} \quad \checkmark$$

$$\frac{rf}{g} = \left\{ (-1, \frac{r}{\varepsilon}), (1, -\varepsilon), (r, -1) \right\} \quad \checkmark$$