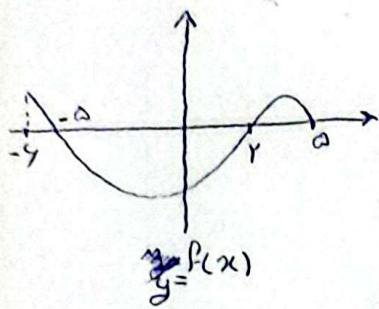
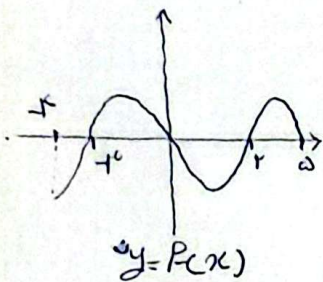




دانشی $y = \sqrt{x} f(x)$ برای اینکه علامت y مثبت باشد باید $f(x) \geq 0$ باشد
 $x \times f(x) \geq 0 \Rightarrow$ $\Rightarrow D(f) = [-5, 2] \cup [2, 5]$



دانشی $y = \sqrt{\frac{-x}{f(x)}}$ برای اینکه علامت y مثبت باشد باید $\frac{-x}{f(x)} \geq 0$ باشد
 $\frac{-x}{f(x)} \geq 0 \Rightarrow$ $\left\{ \begin{array}{l} f(x) \neq 0 \Rightarrow x \neq -3, 0, 2, 5 \\ x = [-3, 0] \cup [0, 2] \cup \{5\} \end{array} \right\} \xrightarrow{n} D(f) = (-3, 0) \cup (0, 2) \cup \{5\}$
 $\Rightarrow$ $\boxed{\text{دارد}}$

$$f(x) - 2f(2) = x^2 - 3x + 4$$

$$x=2, f(2) - 2f(2) = 4 - 6 + 4 \Rightarrow f(2) = -2$$

$$f(-2) = ?$$

$$x=-2 \rightarrow f(-2) - 2f(2) = (-2)^2 - 3(-2) + 4 = 4 + 6 + 4 = 14 \Rightarrow f(-2) = 14 - 4 = 10$$

$$f(x) = \begin{cases} x - \sqrt{x+4} & x > 3 \\ 2x + 3 & x \leq 3 \end{cases} \quad f(f(5)) + f(f(1)) = ?$$

$\downarrow \quad \downarrow$
 $5 + 3 = 8$

$$f(5) = 5 - \sqrt{9} = 2 \quad f(f(5)) = f(2) = 2 \times 2 + 3 = 7$$

$$f(1) = 2 \times 1 + 3 = 5 \quad f(f(1)) = f(5) = 5 - \sqrt{9} = 2$$

$$f(x) = ax^2 - bx + 2 : f(x-1) - f(x) = 4x + 2 \quad a-b = ?$$

$x \in \mathbb{R}$

$$\text{if } x=1 \Rightarrow f(0) - f(1) = 4 + 2 = 6$$

$$\downarrow \quad \downarrow \quad \Rightarrow 2 - (a - b + 2) = 6 \Rightarrow 2 - a + b - 2 = 6 \Rightarrow a - b = -6$$

$$P(x) = \frac{x^r + f x + g}{x^r + f x + y} \quad P(\sqrt{r} - r) = ?$$

$$\frac{(\sqrt{r}-r)^t + t(\sqrt{r}-r) + \omega}{(\sqrt{r}-r)^t + t(\sqrt{r}-r) + v} = \frac{r+t-t\sqrt{r}+t\sqrt{r}-1+\omega}{r+t-t\sqrt{r}+t\sqrt{r}-1+v} = \frac{r}{v} = \left(\frac{r}{v}\right)$$

$$f(x - \frac{1}{x}) = \frac{x^r + 1}{x^r} \quad f(-r) = ?$$

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

$$\frac{x^{r+1}}{x^r} = x^r \cdot \frac{1}{x^r} = \left(x - \frac{1}{x}\right)^{r+1} \Rightarrow f(-r) = (-r)^{r+1} = \boxed{11}$$

$$(x - \frac{1}{x})^r = x^r + \frac{1}{x^r} - r$$

$$P(x) = \{(r, 0), (1, -f), (0, r), (v, 1)\}$$

$$g(x) = \sqrt{9-x^2} \Rightarrow D(g) = -\frac{x}{\sqrt{9-x^2}} \quad 9-x^2 \geq 0 \Rightarrow -3 \leq x \leq 3$$

$$\frac{f}{g} = \left\{ \left(0, \frac{1}{4} \right), \left(1, \frac{1}{11} \right), \left(2, \frac{0}{10} \right) \right\}$$

$$D(f) \cap D(g) = \{0, 1, r\}$$

$$- \frac{\partial}{\partial p} \quad \left\{ \left(0, \frac{p}{p}\right), \left(1, -\frac{\sqrt{A}}{p}\right), \left(2, 0\right) \right\}$$

$$\begin{aligned} g(0) &= \sqrt{9} = 3 & g(1) &= \sqrt{9-1} = \sqrt{8} \\ g(r) &= \sqrt{9-r} = \sqrt{8} \end{aligned}$$

$$\text{Ans} = \left\{ \left(0, \frac{p}{f}\right), \left(1, \frac{\sqrt{\lambda}}{f}\right), \left(1, \frac{\sqrt{\lambda}}{f}\right) \right\} \Rightarrow \left\{ \left(0, \frac{p}{f}\right), \left(1, \frac{\sqrt{\lambda}}{f}\right) \right\}$$

$$f(x) = \{(2, 1), (3, 4), (-5, 2), (1, -2)\}$$

الف) $r_f(x)$
 $= \{(2, 2) \text{ و } (4, 8) \text{ و } (-5, 4) \text{ و } (1, -4)\}$

$$\hookrightarrow) P(x) + 1$$

$$= \{(1, 1), (1, 0), (0, 1), (1, -1)\}$$

$$c) \text{ } r^2 p^r(x) + 1$$

$$= \{(r, r), (r, r+1), (-2, 1r), (1, 1r)\}$$

$$= \{(1, 1), (4, 4), (-1, 2), (2, -1)\}$$

$$P(x) = \{(2, 3), (5, 2), (1, 4), (3, 1), (6, 2)\}$$

$$D(f) \cap D(g) = \{x, y, w\}$$

$$g(x) = \{(1, 0), (r, 1), (-1, r), (-r, -1), (r, -1)\}$$

الف) $f - g = \{(2, 2), (1, 4), (3, 2)\}$

$$\therefore \frac{f''}{g} = \{(r, y), \underbrace{(r, \frac{1}{0})}_{\text{DNE}}, (r, \frac{r}{-1})\} \Rightarrow = \{(r, y), (r, -1)\}$$