

$$y = f(x) \quad , \quad y = \sqrt{x f(x)} \rightarrow x f(x) \geq 0$$

$$\begin{aligned} x &= 0 \\ x &= 2 \\ x &= 0 \\ x &= -5 \end{aligned}$$

$$\frac{-5 \quad 0 \quad 2 \quad 5}{- \quad + \quad - \quad +} \rightarrow D_f = [-5, 0] \cup [2, 5]$$

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$$\frac{-x}{f(x)} \geq 0 \quad x=0 \quad f(x) = 0, 2, 0, -3 \quad \frac{-3 \quad 0 \quad 2 \quad 5}{- \quad + \quad + \quad -}$$

$$D_f = (-3, 2) - \{0\} \rightarrow -2, -1, 1 \rightarrow \text{مجموعه}$$

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$$f(x) - 2f(2) = x^2 - 3x + 2 \rightarrow f(-2) = ?$$

$$f(1) - 2f(2) = 1 - 4 + 2 \rightarrow -f(2) = 2 \rightarrow f(2) = -2$$

$$f(2) - 2f(-2) = 4 + 4 + 2 \rightarrow f(-2) = 1$$

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$$\begin{cases} f(4) \rightarrow 4 - \sqrt{9} = 2 \\ f(1) \rightarrow 2 \times 1 + 3 = 5 \end{cases} \quad \frac{f(2) + f(4)}{2} = 9$$

$$2 \times 2 + 3 = 7$$

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$$f(x) = \frac{x^2 + 4x + 4}{x^2 + 4x + 4} \rightarrow f(\sqrt{3}-2) = ?$$

$$f(\sqrt{3}-2) = \frac{(\sqrt{3}-2)^2 + 4(\sqrt{3}-2) + 4}{(\sqrt{3}-2)^2 + 4(\sqrt{3}-2) + 4} \rightarrow \frac{\cancel{3} + \cancel{4} - 4\sqrt{3} + \cancel{4}\sqrt{3} - \cancel{4} + 4}{\cancel{3} + \cancel{4} - 4\sqrt{3} + \cancel{4}\sqrt{3} - \cancel{4} + 4} = \frac{4}{4} = \frac{4}{4} = 1$$

$$f(x - \frac{1}{x}) = \frac{x^4 + 1}{x^2} \rightarrow \frac{x^4}{x^2} + \frac{1}{x^2} \rightarrow x^2 + \frac{1}{x^2} \rightarrow \frac{x^2 + \frac{1}{x^2} - 2 + 2}{x^2 + \frac{1}{x^2} - 2 + 2} \rightarrow (x - \frac{1}{x})^2 + 2 \rightarrow f(x) = x^2 + 2$$

$$f(-3) = (-3)^2 + 2 = 9 + 2 = 11$$

$$الف) \frac{f}{g} = \left\{ (0, \frac{2}{3}), (1, \frac{-4}{2\sqrt{2}}), (2, \frac{0}{10}) \right\} = \left\{ (0, \frac{2}{3}), (1, \frac{-2}{\sqrt{2}}), (2, 0) \right\}$$

$$ب) \frac{g}{f} = \left\{ (0, \frac{3}{4}), (1, \frac{\sqrt{2}}{4}) \right\}$$

$$الف) \{ (2, 2), (3, 8), (-5, 4), (1, -4) \}$$

$$ب) \{ (2, 2), (3, 8), (-5, 4), (1, -1) \}$$

$$ج) \{ (2, 4), (3, 49), (-5, 13), (1, 13) \}$$

$$د) \{ (1, 1), (\frac{3}{4}, 4), (\frac{-5}{4}, 2), (\frac{1}{4}, -2) \}$$

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

$$ب) \frac{f}{g} = \left\{ (1, \frac{4}{1}), (2, \frac{2}{1}), (3, \frac{2}{-1}) \right\} = \{ (2, 4), (3, -2) \}$$