

$$y = \sqrt{x f(x)}$$

$$x \cdot f(x) \geq 0$$

$$D_f = [-4, -1] \cup [0, 2]$$

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$$y = \frac{\sqrt{-x}}{f(x)} \quad (-3, 0) \cup (2, 4]$$

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$$\frac{-x}{f(x)} \geq 0 \quad \text{عدد ۴}$$

$$f(x) \neq 0$$

$$f(2) - 2f(2) = 14 \Rightarrow f(2) = -14$$

$$f(x) = x^2 + 3x + 4 + 2(-14) = x^2 + 3x - 24$$

$$f(-2) = (-2)^2 + 3(-2) - 24 = -26$$

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$$f(1) = 2(1) + 3 = 5 \quad 1 \leq 3 \quad f(f(1)) = 2$$

$$f(0) = 0 - \sqrt{0+4} = 0 - 2 = -2 \quad 0 \leq 3 \quad f(f(0)) = 4$$

$$f(2) = 2(2) + 3 = 7 \quad 2 \leq 3 \quad f(f(1)) + f(f(0)) = 9$$

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$$f(x) - f(x-1) \Rightarrow 2ax - a - b$$

$$2a = 4 \Rightarrow a = 2$$

$$-(a+b) = 2 \Rightarrow b = -4$$

$$a-b = 2 - (-4) = 6$$

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$f(3) = 3^2 - 3(3) + 1 = 1$ $f(-1) = (-1)^2 - 3(-1) + 1 = 5$ $f(2) = 2^2 - 3(2) + 1 = -1$	$\frac{f(1) + 0}{(-1)^2} = 1$	6
$f(4) = 13$ $f(-2) = 3$ $f(2) = 1$	$\frac{3f(4) - 2f(-2)}{f(2)} = \frac{3(13) - 2(3)}{1} = \frac{31}{1}$	7
$f(4) = 1$ $f(1) = 4 \rightarrow f(f(4)) = 4$ $f(f(3)) \rightarrow f(3) = 2 \rightarrow f(2) = 4$ $f(f(3)) = 4$	$4 - 4 = 0$ $f(1) - 2 \cdot 4 - 5 = 4$ $\frac{0}{4} = 0$	8
$x = \sqrt{3} - 2$ $x = \sqrt{3} - 2 \Rightarrow x + 2 = \sqrt{3}$	$(x+2)^3 = (\sqrt{3})^3$ $x^3 + 6x^2 + 12x + 8 = 3\sqrt{3}$ $f(\frac{x}{y}) = \frac{(x)^3 + 6(x)^2 + 12(x) + 8}{(y)^3 + 6(y)^2 + 12(y) + 8} = \frac{31}{14}$	9
$f(\sqrt{x}) = (\sqrt{x})^2 + \frac{1}{(\sqrt{x})^2} = x + \frac{1}{x}$ $(f(\sqrt{x}))^2 = x^2 + 2 + \frac{1}{x^2}$	$\cancel{x^2 + 2} + \cancel{\frac{1}{x^2}} - \cancel{x^2} - \cancel{\frac{1}{x^2}}$ (2)	10