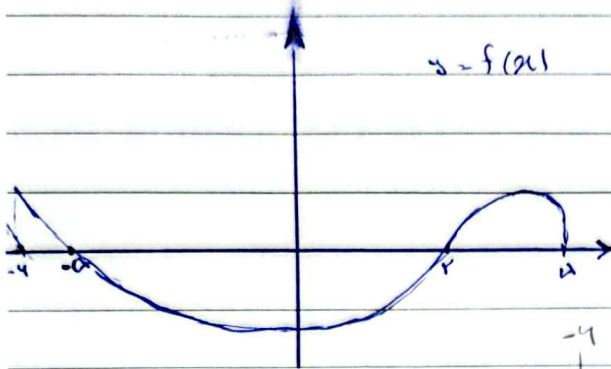


الف

المجال



$$y = f(x)$$

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

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

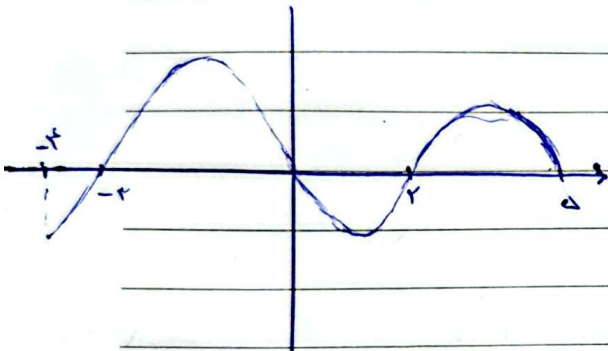
$$D_f = [-4, 0] \cup [2, 4]$$

	-4	-2	0	2	4
x	-	-	+	+	+
f(x)	+	+	-	-	+
	-	+	-	+	-

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

$$f(x) \neq 0 \quad \frac{-x}{f(x)} \geq 0$$

د



$$D_f = (-2, 0) \cup (0, 2)$$

	-2	0	2	4
-x	+	+	-	-
f(x)	-	+	-	+
	-	+	+	-

$$\frac{1}{-2}, -1, -2$$

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

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

$$-f(x) = x \quad f(x) = -x$$

$$f(-x) = ? \quad f(-x) - f(x) = x^2 + x + 4$$

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

$$f(-x) = 1$$

$$f(x) = \begin{cases} x - \sqrt{x^2 + 4} & ; x > 2 \\ x + 2 & ; x < 2 \end{cases}$$

$$f(f(4)) + f(f(1)) = 9$$

$$4 - \sqrt{9} = 1 \quad 1 + 2 = 3$$

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حل المسألة

$$f(n-1) - f(n) = 2n + 2$$

$$f(n) = an^2 + bn + c \quad \Delta$$

$$a - b = ?$$

$$-2 - a = -1$$

$$a(n-1)^2 - b(n-1) + c$$

$$a(2n^2 - 2n + 1) - b(n-1) + c$$

$$a(2n^2 - 2n + 1) - b(n-1) + c = 2an^2 - 2an + a - bn + b + c = 2an^2 - (2a+b)n + (a+b+c)$$

$$-2an + a + b$$

$$-2an$$

$$a = -2$$

$$a + b$$

$$-2 + b = 2$$

$$b = 4$$

$$\frac{(\sqrt{2}-1)^2 + f(\sqrt{2}-1) + 2}{(\sqrt{2}-1)^2 + f(\sqrt{2}-1) + 2}$$

$$(\sqrt{2}-1)^2 + f(\sqrt{2}-1) + 2$$

$$2 + 2 - 2\sqrt{2} + 2\sqrt{2} - 1 + 2 = 3$$

$$2 + 2 - 2\sqrt{2} + 2\sqrt{2} - 1 + 2 = 3$$

$$f(\sqrt{2}-1) = ?$$

$$f(n) = \frac{n^2 + 2n + 2}{n^2 + 2n + 2}$$

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

$$f(-2)$$

$$\left(2 - \frac{1}{2}\right)^2 = \frac{2^2 + 1}{2^2} = \frac{5}{4}$$

$$f\left(2 - \frac{1}{2}\right) = \left(2 - \frac{1}{2}\right)^2 + 2 = \frac{5}{4} + 2 = \frac{13}{4}$$

$$f(n) = \{(2, 0), (1, -2), (0, 2), (2, 1)\}$$

$$g(n) = \sqrt{9 - 2n^2}$$

$$\frac{f}{g} = \left\{(2, 0), \left(1, \frac{-2}{\sqrt{7}}\right), \left(0, \frac{2}{\sqrt{9}}\right)\right\}$$

$$\frac{g}{f} = \left\{(0, \frac{2}{\sqrt{9}}), \left(1, \frac{-\sqrt{7}}{2}\right)\right\}$$

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

$$2f(n) = \{(2, 2), (2, 8), (-2, 4), (1, -4)\}$$

$$f(n) + 1 = \{(2, 2), (2, 5), (-2, 3), (1, -1)\}$$

$$3f^2(n) + 1 = \{(2, 5), (2, 17), (-2, 13), (1, 13)\}$$

$$f^2(n) = \{(2, 1), \left(\frac{2}{\sqrt{2}}, 2\right), \left(-\frac{2}{\sqrt{2}}, 2\right), \left(\frac{1}{\sqrt{2}}, 1\right)\}$$

Parsian

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مسألة 1

$$f(m) = \{ (2, 3), (7, 2), (1, 4), (3, 1), (5, 2) \}$$

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$$g(m) = \{ (1, 0), (2, 1), (-1, 4), (-2, -3), (3, -1) \}$$

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

$$ج \frac{rf}{g} = \{ (2, 4), (3, -2) \}$$