

اسم دفتر (A)

$$x f(x) \geq 0 \rightarrow D_f = [-\infty, 0] \cup [2, \infty]$$

$$\frac{-x}{f(x)} \geq 0 \rightarrow \frac{x}{f(x)} \leq 0 \rightarrow D_f = (-2, 0) \cup (0, 2)$$

$$\begin{aligned} f(2) - 2f(2) &= 2^2 - 2(2) + 4 \\ -f(2) &= 4 - 4 + 4 \\ -f(2) &= 4 \\ f(2) &= -4 \end{aligned}$$

$$\begin{aligned} f(x) &= x^2 - 3x + f(2(-2)) \\ f(x) &= x^2 - 3x + 4 - 4 \\ f(x) &= x^2 - 3x \end{aligned}$$

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 $x = 2$ بالبرهان
 $f(-2) = (-2)^2 - 3(2) = 4 - 6 = -2$
 $f(-2) = 10$

$$\begin{aligned} f(1) &= 1 + 3 = 4 \\ f(4) &= 4 - \sqrt{4+4} = 4 - 2 = 2 \end{aligned}$$

$$\begin{aligned} f(2) &= 2 \times 2 + 3 = 7 \\ f(2) + f(4) &= 7 + 2 = 9 \end{aligned}$$

$$\begin{aligned} f(x-1) &= a(x-1)^2 - b(x-1) + 2 \\ f(x-1) &= a(x^2 - 2x + 1) - b(x-1) + 2 \\ &= ax^2 - 2ax + a - bx + b + 2 \\ &= ax^2 + (-2a - b)x + (a + b + 2) \end{aligned}$$

$$\begin{aligned} f(x-1) - f(x) &= (ax^2 + (-2a-b)x + (a+b+2)) - (ax^2 - bx + 2) \\ &= ax^2 + (-2a-b)x + (a+b+2) - ax^2 + bx - 2 \\ &= (-2a-b+b)x + (a+b+2-2) = -2ax + (a+b) \\ -2a &= 4 \rightarrow a = -2 \\ a+b &= 2 \rightarrow -2 + b = 2 \rightarrow b = 4 \\ a-b &= -2-4 = -6 \end{aligned}$$

$$\begin{aligned} (\sqrt{2}-2)^2 + 4(\sqrt{2}-2) + 4 &= 4 \\ (\sqrt{2}-2)^2 + 4(\sqrt{2}-2) + 2 &= 2 \end{aligned}$$

$$f(\sqrt{2}-2) = \frac{4}{2} = 2$$

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

$$f(2) = 2^2 + 2 = 6$$

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

$$\begin{aligned} 9 - x^2 &\geq 0 \\ x &\geq x^2 \\ x &\geq x \geq -3 \end{aligned}$$

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

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

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

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

د ، $\{ (4, 1), (6, 4), (-10, 2), (2, -2) \}$

الف ، $\{ (2, 2), (1, 4), (3, -2) \}$

ب ، $\{ (2, 4), (\cancel{1, \frac{1}{5}}), (3, -2) \} \rightarrow \{ (2, 4), (3, -2) \}$