

هم پسر A

۱۹,۷۵

پارسا رجالی

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

$$[-\infty, 0] \cup [2, \infty]$$

-۱

	-۲	-۱	۰	۱	۲	۳
x	-	-	۰	+	+	+
$f(x)$	+	۰	-	-	۰	-
$x(f(x))$	-	+	۰	-	+	-

(۴)

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

-۲

	-۲	-۱	۰	۱	۲	۳
$-x$	+	+	۰	-	-	-
$f(x)$	-	+	۰	-	+	۰
$P(x)$	-	+	۰	+	۰	-

$$D_p = (-3, 2) - \{0\} \rightarrow \text{۳ عدد صحیح}$$

(۵)

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

-۳

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

$$f(-2) - 2(-2) = 4 + 6 + 4 \rightarrow f(-2) + 4 = 14$$

$$f(-2) = 10$$

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

-۴

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

$$f(1) = 2(1) + 3 = 5$$

$$f(2) = 2(2) + 3 = 7$$

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

$$f(x) = ax^2 - bx + 2$$

$$f(x-1) - f(x) = 9x + 2$$

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$$x=1 \rightarrow \begin{cases} f(0) = 2 \\ f(1) = a - b + 2 \end{cases}$$

$$2 - (a - b + 2) = 9 + 2$$

$$2 - a + b - 2 = 9 + 2$$

$$b - a = 9 + 2 - 2$$

$$b - a = 9$$

$$a - b = -9$$

(۶)

$$f(x) = \frac{x^2 + 4x + 5}{x^2 + 4x + 7} = \frac{(x+2)^2 + 1}{(x+2)^2 + 3} = \frac{(\sqrt{3}-2+2)^2 + 1}{(\sqrt{3}-2+2)^2 + 3} = \frac{4}{4} = 1 \quad \text{②} - 6$$

$$f\left(x - \frac{1}{x}\right) = \frac{x^2 + 1}{x^2} \rightarrow f\left(x - \frac{1}{x}\right) = x^2 + \frac{1}{x^2} \rightarrow f\left(x - \frac{1}{x}\right) = \left(x - \frac{1}{x}\right)^2 + 2 \quad \text{③} - 7$$

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

$$D_g = [-3, +3]$$

$$f(x) = \{(2, 0), (1, -4), (0, 2), (7, 1)\}$$

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$$\text{الف) } \left\{ \left(2, \frac{0}{10}\right), \left(1, \frac{-4}{10}\right), \left(0, \frac{2}{10}\right) \right\}$$

⑤

$$\text{ب) } \left\{ \left(2, \frac{\sqrt{5}}{4}\right), \left(1, \frac{\sqrt{1}}{-4}\right), \left(0, \frac{3}{4}\right) \right\} \rightarrow \left\{ \left(1, \frac{\sqrt{1}}{-4}\right), \left(0, \frac{3}{4}\right) \right\}$$

لم تعریف نشده

$$\text{الف) } 2f(x) = \{(2, 2), (3, 8), (-5, 4), (1, -4)\}$$

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$$\text{ب) } f(x) + 1 = \{(2, 2), (3, 5), (-5, 3), (1, -1)\}$$

⑥

$$\text{ج) } 3f^2(x) + 1 = \{(2, 4), (3, 49), (-5, 13), (1, 13)\}$$

$$\text{د) } f(2x) = \left\{ \left(1, 1\right), \left(\frac{3}{2}, 4\right), \left(-\frac{5}{2}, 2\right), \left(\frac{1}{2}, -2\right) \right\}$$

$$\text{الف) } f - g = \left\{ \left(2, 2\right), \left(3, 2\right) \right\}$$

(1, 4)

1, 7, 5

- 10

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