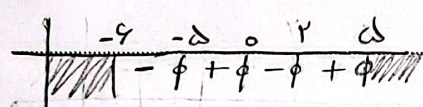


$$y = \sqrt{x f(x)}$$

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

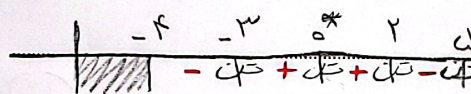


$$P = [-2, 0] \cup [2, 4]$$

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

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

$$f(x) \neq 0$$



$$P = (-3, 0) \cup (2, 4)$$

اعداد صحیح در دامنه $-2, -1, 1, 2$

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

$$f(-2)$$

$$x=2 \rightarrow f(2) - 2f(2) = 4 - 9 + 4 \rightarrow f(2) = -2$$

$$x=-2 \rightarrow f(-2) + 4 = 4 + 9 + 4 \rightarrow f(-2) = 10$$

$$f(f(4)) + f(f(1)) \rightarrow f(2) + f(4) = 7 + 9$$

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

$$f(x-1) = a(x-1)^2 - b(x-1) + 2 = ax^2 - 2ax + a - bx + b + 2$$

$$f(x-1) - f(x) = ax^2 - 2ax + a - bx + b + 2 - ax^2 + bx - 2$$

$$= -2ax + a + b = 9x + 2 \rightarrow -2a = 9 \rightarrow a = -\frac{9}{2}$$

$$\rightarrow a + b = 2 \rightarrow b = \frac{13}{2}$$

$$a - b = -11$$

$$1. f(x) = \frac{x^2 + 5x + 6}{x^2 + 5x + 6} = (x+1)(x+2) \quad (2)$$

$$3. f(\sqrt{3}-1) = \frac{(\sqrt{3}-1)^2 + 5(\sqrt{3}-1) + 6}{(\sqrt{3}-1)^2 + 5(\sqrt{3}-1) + 6} = \frac{3 - 2\sqrt{3} + 1 + 5\sqrt{3} - 5 + 6}{3 - 2\sqrt{3} + 1 + 5\sqrt{3} - 5 + 6} = \frac{5\sqrt{3} - 1}{5\sqrt{3} - 1 + 6} = \frac{5\sqrt{3} - 1}{5\sqrt{3} + 5}$$

$$\Rightarrow \frac{5}{5} = 1 \quad (2)$$

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

$$9. \left(x - \frac{1}{x}\right)^2 = x^2 + \frac{1}{x^2} - 2 = (-3)^2 = 9 \Rightarrow x^2 + \frac{1}{x^2} = 11 \quad (1)$$

$$11. \text{الف) } \frac{f}{g} = \left\{ (2, 0), (1, -\sqrt{2}), (0, \frac{2}{3}) \right\} \quad (1)$$

$$15. \text{ب) } \frac{g}{f} = \left\{ (1, -\frac{\sqrt{2}}{2}), (0, \frac{2}{3}) \right\} \quad (2)$$

$$17. \text{الف) } 2f(x) = \left\{ (2, 2), (3, 1), (-\frac{1}{2}, 4), (1, -4) \right\} \quad (1)$$

$$18. \text{ب) } f(x) + 1 = \left\{ (2, 3), (3, 5), (-\frac{1}{2}, 5), (1, -3) \right\} \quad (1, 5)$$

$$19. \text{ج) } 3f^2(x) + 1 = \left\{ (2, 13), (3, 17), (-\frac{1}{2}, 13), (1, 17) \right\}$$

$$20. \text{د) } f(2x) = \left\{ (1, -1) \right\}$$

PARAMOUNT

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

P

Date :

Subject :

الف $f \cdot g = \{(1, 4), (2, 2), (3, 2)\}$ 10

ب $\frac{f}{g} = \{(2, 3), (3, -1)\}$
 $\{(1, 9), (3, -1)\}$

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