

SUBJECT

Year: Month: Day: 9/5

$\sqrt{0} \leq y \leq \sqrt{9} \rightarrow 0 \leq y \leq 3$ تقدير
 $[0, 3]$ محدود

الف) $y = (x^2 - 4x + 4) \quad y(x) = 5 - 1 + 1 = 5$ (9)

$x = -\frac{(-4)}{2} = 2$ نقطة
 $[4, +\infty)$ تزايد

ب) $y = -x^2 + 4x + 4 \quad 2x - \frac{4}{-2} = 2 \Rightarrow y = (1)^2 + 4(1) + 4 = 9$

ج) $y = \sqrt{x^2 - 4x + 4} \quad x = 1 \rightarrow y = -9 + 4 + 4 = -1 \quad (-\infty, 1]$
 $x^2 - 4x + 4 \geq 0 \Rightarrow (x-2)^2 \geq 0 \Rightarrow x \in \mathbb{R}$ (0, +\infty)

الف) $R =$ المجال x (19)
 $R =$ المجال y

$[0, +\infty) \quad \sqrt{R} = R \Rightarrow R = 0$

(د) $\frac{1}{x} + \frac{1}{x^2} \rightarrow 0 \quad x \in (0, +\infty)$

$R = [1, 3]$ $a = 1 \quad c = 1 \quad \frac{a}{c} = 1$ $y = \frac{1 \cdot x + 1}{x - 1}$ (الف) (2)

$R = [1, 3]$ $a = 2 \quad c = 1 \quad \frac{a}{c} = 2$ $y = \frac{2x + 1}{x - 1}$ (ب)



Senobar

$$h(x) = f'(x) \circ g(x) \rightarrow D_g \cap D_f = \{x, x^2 - 1\}$$

$$x = 1 \rightarrow h(1) = f'(1) \circ g(1) = f'(1) + 1 = 1 + 1 = 2$$

$$x = -1 \rightarrow h(-1) = f'(-1) \circ g(-1) = f'(-1) + 1 = -1 + 1 = 0$$

$$x = 1 \rightarrow h(1) = f'(1) \circ g(1) = f'(1) + 1 = 1 + 1 = 2$$

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

$$h(x) = f'(x) \circ g(x) \Rightarrow x \in D_g \cap D_f \Rightarrow x \in \{x, x^2 - 1\}$$

$$D_f = [0, 1] \cup [2, 3]$$

$$D_h = \{x \in D_g \cap D_f \mid x \neq 1\} = [0, 1) \cup [2, 3]$$

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$$f(x) = \sqrt{x} \quad x \geq 0 \quad f'(x) = \frac{1}{2\sqrt{x}}$$

$$h(x) = \frac{f'(x)}{g(x)} = \frac{\frac{1}{2\sqrt{x}}}{x^2 - 1} = \frac{1}{2\sqrt{x}(x^2 - 1)}$$

$$x = 1 \rightarrow h(1) = \frac{1}{2\sqrt{1}(1^2 - 1)} = \frac{1}{2(0)} = \text{undefined}$$

$$x = -1 \rightarrow h(-1) = \frac{1}{2\sqrt{-1}((-1)^2 - 1)} = \frac{1}{2(0)} = \text{undefined}$$

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هذه هي

$$x \in A \quad y = \sqrt{x-1} \quad x \in A \quad y \in B$$

$$x = y^2 + 1$$

(1)

$$f(x) = \sqrt{4x^2 + 1} + 2x \quad \sqrt{(4x+1)^2} = |4x+1| = 4x+1 = \sqrt{x-1} + 1$$

$$g(x) = \sqrt{4x^2 + 1} - 2x = \sqrt{(4x-1)^2} = |4x-1| = 4x-1 = \sqrt{x-1} - 1$$

$$a=0 \quad c=-1 \quad \frac{a^2+b^2}{b^2} = \frac{1}{1} = 1 \quad \frac{1}{2} \sqrt{x-1}$$

$$f(x) = \frac{x+1}{x^2-2x+3} \quad g = \{ (1,1), (2,1) \}$$

$$\frac{g}{f} = [0, 1, 2, 3] \quad x^2-2x+3 = (x-1)(x-3) \quad x \neq 1, 3$$

$$f(x) = \frac{1}{x^2-2x+3} \quad x=1, 3$$

نقاط تقاطع

$$g(x) = 1 \quad \frac{g}{f} = \frac{1}{f} = x^2-2x+3 = 1 \quad x=1, 3$$

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$$g(x) = [(-2, 3), (1, -1), (2, 1), (3, 1)]$$

$$f(x) = [(1, 2), (2, 1), (3, 1), (4, 1)]$$

$$((1, 2), (2, 1), (3, 1), (4, 1))$$

$$\{ (1, 2), (2, 1), (3, 1), (4, 1) \}$$

$$x = -x = -2 \quad x^2+1 = 1 \quad x = -1, 1$$

$$x = 1 \quad x^2+1 = 2 \quad x = 1, -1$$

$$x = 2 \quad x^2+1 = 5 \quad x = 2, -2$$

$$x = -1 \quad x^2+1 = 2 \quad x = -1, 1$$

$$x = 1 \quad x^2+1 = 2 \quad x = 1, -1$$

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