

$$\text{الف) } y^2 - x = x^2$$

$$y_1^2 = x^2 + x$$

$$y_2^2 = x^2 + x$$

$$y_1^2 = y_2^2 \Rightarrow y_1 = y_2 \quad \checkmark$$

س ۱

$$\text{ب) } |y| + x^2 = x + x^2 \quad x=0 \Rightarrow |y|=x \quad y = \pm x$$

$$+ + = 0$$

$$\text{ج) } \sqrt{x-4} + |y-2| = 0 \quad x-4=0 \quad (x=4) \quad y-2=0 \quad (y=2) \quad \checkmark$$

$$\text{د) } x = \cos y \quad x=0 \Rightarrow \cos y = 0 \quad y = \frac{\pi}{2}, \frac{3\pi}{2}, \dots$$

$$\text{الف) } y = \frac{x+4}{x^2-4x} \quad x^2-4x=0 \quad x(x-4)=0 \quad x=0, 4 \quad D_f = \mathbb{R} - \{0, 4\}$$

$$\text{ب) } y = \frac{x+4}{x^2-\sqrt{x+4}} \quad b^2-4ac = 4-4x-16 \Rightarrow \Delta < 0 \quad \text{نامرئی و منفی} \rightarrow D_f = \mathbb{R}$$

$$\text{ج) } y = \frac{x+4}{x^2+x+4} \quad b^2-4ac = 1-16 = -15 \Rightarrow \Delta < 0 \quad \text{نامرئی و منفی} \rightarrow D_f = \mathbb{R}$$

$$\text{د) } y = \frac{x+4}{x^2-4x^2} \quad x^2(x-4)(x+4)=0 \quad x=0, 4, -4 \quad D_f = \mathbb{R} - \{0, 4, -4\}$$

$$\text{الف) } y = \sqrt{9-x} + \sqrt{x-2} \quad 9-x \geq 0 \quad 9 \geq x \quad x-2 \geq 0 \quad x \geq 2 \quad D_f = [2, 9]$$

$$\text{ب) } y = \frac{x^2+1}{x^2+1} \quad x^2+1=0 \quad x^2=-1 \quad \text{مخرج همیشه مثبت} \rightarrow D_f = \mathbb{R}$$

$$\text{ج) } y = \frac{\sqrt{x-4}}{x-4} \quad x-4 \geq 0 \quad x \geq 4 \quad x-4 \neq 0 \quad x \neq 4 \quad D_f = (4, +\infty)$$

$$\text{د) } y = \frac{x^2+4}{|x|+x^2} \quad |x|+x^2=0 \quad D_f = \mathbb{R} - \{0\}$$

$$x=0$$

Date:

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نصاب، مسیری

$$y = |x|$$

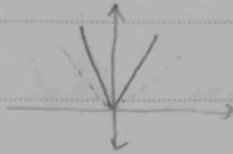


س ۴

$$الف) y = |x| + 2$$



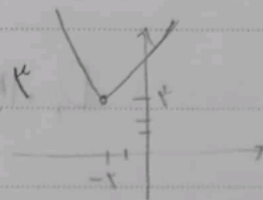
$$ب) y = 2|x|$$



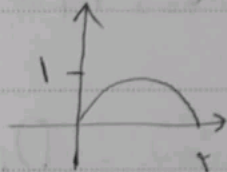
$$ج) y = |x+2|$$



$$د) y = |x+2| + 3$$

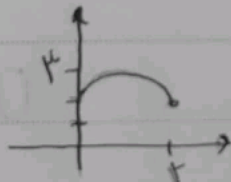


$$f(x)$$

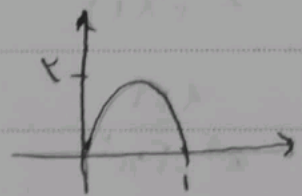


س ۱۵

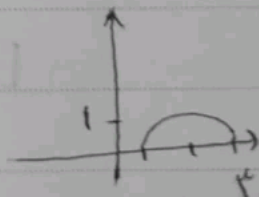
$$الف) f(x) + 2$$



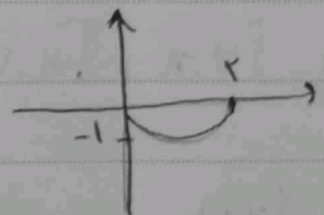
$$ب) 2f(x)$$



$$ج) f(x-1)$$

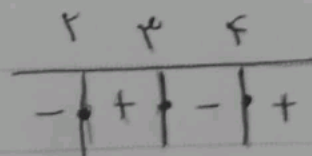


$$د) -f(x)$$



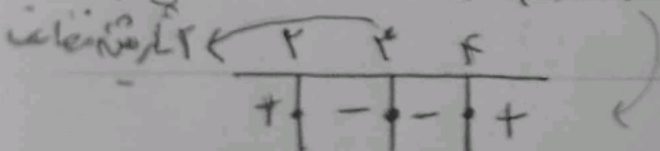
س ۹

$$الف) y = (x-2)(x-4)(x-5)$$



$$ب) y = (x-2)(x-4)(x-5)$$

$$الف) y = (x-2)(x-4)(x-5)$$



Date:

Sub:

لثا، صبر

الف) $y = \frac{(x^2-2)(x^2-4)}{x^2-2}$

$$\begin{array}{r} 2^2 \quad 2^2 \quad 2^2 \\ -1 + 2 -1 + \end{array}$$

1. ج

ب) $y = \frac{(x^2-4)(x^2-4)}{(x^2-2)^2}$

$$\begin{array}{r} 2^2 \quad 2^2 \quad 2^2 \\ +1 -2 -1 + \end{array}$$

الف) $y = \frac{x^2-2x+2}{x-2}$

$$\begin{array}{r} x^2-2x+2 \div x-2 \\ -x^2+2x \\ \hline -2x+2 \\ -(-2x+4) \\ \hline 2x-2 \end{array}$$

ب) $y = \frac{(x+1)(x+1)}{x^2-2}$

$$\begin{array}{r} 2^2 \quad 2^2 \\ +1 -1 -1 + \end{array}$$

ب) $y = \frac{(x-1)(x-2)}{x^2-2x+2}$

$$\begin{array}{r} 2^2 \quad 2^2 \\ +1 +1 -1 + \end{array}$$

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

$$\begin{array}{r} 2^2 \quad 2^2 \\ +1 -1 -1 + \end{array}$$

2. ج

b'-fac = 1 - 1 = 0 Δ < 0

ب) $y = \frac{(x^2+2x+2)}{(x^2+2x+2)}$

b'-fac = 4 - 14 = -10 Δ < 0

$$\begin{array}{r} 2^2 \quad 2^2 \\ +1 -1 -1 + \end{array}$$

عبارت صحیح است

b'-fac = 4 - 14 = -10 Δ < 0

الف) $y = \sqrt{\frac{x^2-1}{x^2-x}}$

$x^2-1=0, x=1$ $x(x-1)(x+1)$ $P_f(-\infty, -1) \cup (0, 1) \cup (1, +\infty)$

$$\begin{array}{r} 2^2 \quad 2^2 \quad 2^2 \\ -1 \quad 0 \quad 1 \end{array}$$

لثا، صبر

ب) $y = \sqrt{\frac{x^2-4}{x^2-2x+2}}$

$x^2-4=0, x(x+2)(x-2)$
 $x^2-2x+2=0, (x-1)(x+1)$

$$\begin{array}{r} 2^2 \quad 2^2 \quad 2^2 \\ -1 \quad 1 \quad 1 \end{array}$$

$P_f(-\infty, -2] \cup (1, 2) \cup (2, +\infty)$