

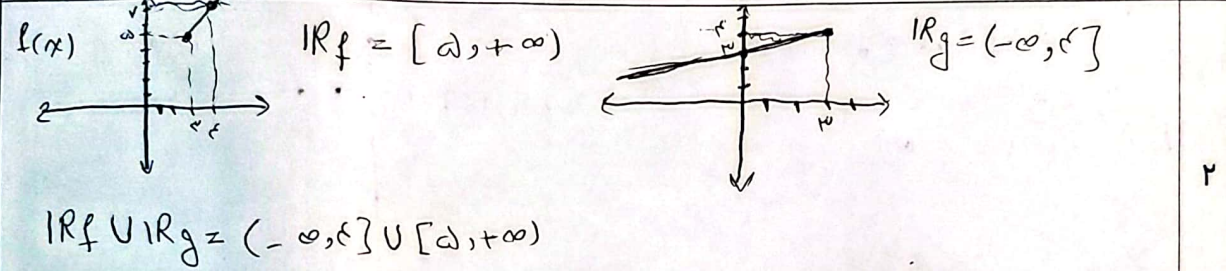
نام و نام خانوادگی نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ۸۰۰ کلاس ... د. هجری ...

$$g = \{(-1, 2), (0, 8), (2, 0), (1, 4)\} \quad \begin{cases} \sqrt{1-x^2} \Rightarrow 1-x^2 \geq 0 \\ x^2 \leq 1 \Rightarrow -1 \leq x \leq 1 \end{cases}$$

$$(1-x^2) \Rightarrow \mathbb{R}f = (-\infty, 1] \Rightarrow \sqrt{1-x^2} \Rightarrow \mathbb{R}f = [0, 1]$$

$$f = \{(-1, 0), (0, 1), (1, 0)\} \Rightarrow \mathbb{R}f = \{(-1, 0), (0, 1), (1, 0)\}$$

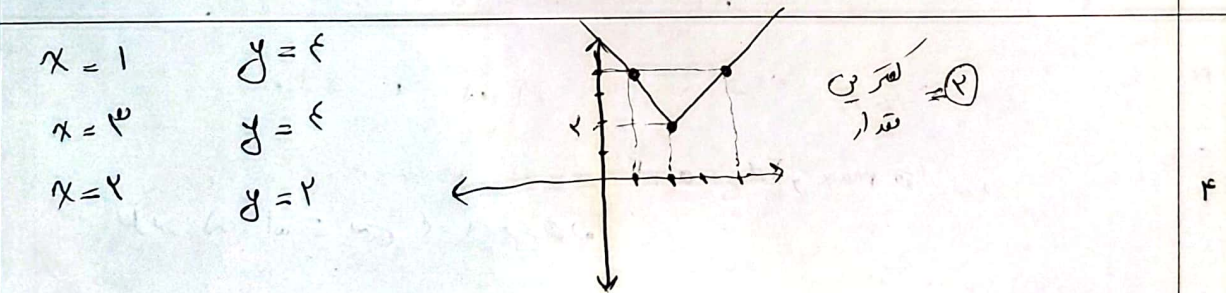
$$g - \mathbb{R}f = \{(-1, 2), (0, 8), (1, 4)\} \quad \text{مجموعه} = 2 + 8 + 4 = 14$$



$$\frac{-x^2}{x} + x + 3 > \frac{x}{x} \Rightarrow \frac{-x^2}{x} + x > -\frac{x}{x} \Rightarrow \frac{-x^2}{x} + x + \frac{x}{x} < 0$$

$$x^2 - 2x - 3 < 0 \Rightarrow (x+1)(x-3) < 0 \Rightarrow \frac{-1}{+1} \frac{3}{-1} \Rightarrow (-1, 3)$$

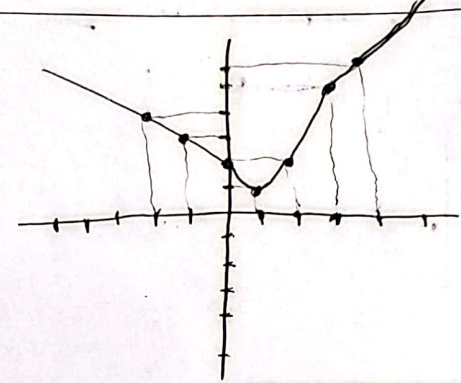
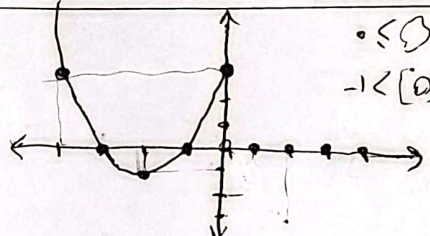
$$\sqrt{b-a} = \sqrt{4+1} = \sqrt{5} = 2$$



$$x < -1$$

$$\begin{cases} x > 0 & x - 2x - 2 = -x - 2 \\ -1 \leq x \leq 0 & -x - 2x - 2 = -3x - 2 \\ x < -1 & -x + 2x + 2 = x + 2 \end{cases}$$

$$\mathbb{R}f = (-\infty, 1]$$

$g(x+y) = x^2 + dx + m \Rightarrow x^2 + (d-y)x + (m-y) = 0 \xrightarrow{\Delta \geq 0}$ $(d-y)^2 - 4(m-y) \geq 0 \Rightarrow 4d + y^2 - 4y - 4m + 4y \geq 0 \Rightarrow$ $y^2 - 4y + (4d - 4m) \geq 0 \Rightarrow 4y - 4d + 4m \leq 0 \Rightarrow \boxed{m \leq d}$ $m \Rightarrow \{1, 2, 3\} \Rightarrow \text{جواب صحیح}$	6
$f(x) = \begin{cases} x+2 & x \geq 2 \\ x^2 - 4x + 2 & 0 \leq x < 2 \\ x + 2 & x < 0 \end{cases}$ $\text{IR}f = [1, +\infty)$ 	7
$f(x) = \begin{cases} x^2 + 4x + 2 & x \leq 0 \quad \textcircled{1} \\ [2x] - 2x & x > 0 \quad \textcircled{2} \end{cases}$ $\left. \begin{array}{l} \text{IR}f\textcircled{1} = [-1, +\infty) \\ \text{IR}f\textcircled{2} = \{0\} \end{array} \right\} \text{IR}f = [-1, +\infty)$  $0 \leq [0] - [0] < 1$ $-1 < [0] - 0 \leq 0$	8
$y = a + 1 - \sqrt{x+2} \quad \text{ID} = [b, +\infty) \quad \text{IR} = (-\infty, d] \quad \boxed{a = 5}$ $x+2 \geq 0 \Rightarrow x \geq -2 \rightarrow x \geq -1, d \quad \boxed{b = -1, d}$ $ab = -9$ دائری $x = -1, d$ را بیابید	9
$f(x) = \sqrt{x+1} + \sqrt{1-x} \quad g(x) = \sqrt{x+2\sqrt{1-x^2}} - f(x)$ $y = \frac{f(x)}{g} = \frac{\sqrt{x+1} + \sqrt{1-x}}{\sqrt{x+2\sqrt{1-x^2}} - f(x)} \Rightarrow \frac{1}{g} f(x) = \sqrt{x+2\sqrt{1-x^2}} \rightarrow$ $\frac{1}{g} (\sqrt{x+1} + \sqrt{1-x}) = \sqrt{x+2\sqrt{1-x^2}} \Rightarrow y = \sqrt{x+1} + \sqrt{1-x}$ $-\sqrt{x+2\sqrt{1-x^2}} \Rightarrow -1 \leq x \leq 1 \quad \text{IR} = [0, \sqrt{2}]$	10