

$x^2 - 1 \geq 0 \rightarrow (x-1)(x+1) \geq 0 \rightarrow \frac{-1}{-1} \frac{+1}{+1} \text{ (I)}$ $(-\infty, -1] \cup [1, +\infty)$ $x - 2 \geq 0 \rightarrow x \geq 2 \text{ (II)}$ $Df = I \cap II \Rightarrow [2, +\infty)$	6
$-1) \quad 4 - 4x \geq 0 \rightarrow x \leq 1 \text{ (I)}$ $4x - 4 > 0 \rightarrow 4x > 4 \rightarrow x > 1 \text{ (II)}$ $I \cap II \Rightarrow Df = (1, 1]$	
$4x - a \geq 0 \rightarrow 4x \geq a \rightarrow x \geq \frac{a}{4}$ $b - 4x \geq 0 \rightarrow x \leq \frac{b}{4}$ $\left[\frac{a}{4}, \frac{b}{4} \right] \neq \emptyset \rightarrow \frac{a}{4} \leq \frac{b}{4}$ $\frac{a}{4} = 2 \rightarrow a = 8 \quad \frac{b}{4} = 2 \rightarrow b = 8 \quad \frac{b}{a} = \frac{8}{8} = 1$	7
$x^2 - x - 6 = (x-3)(x+2) \rightarrow (-2) \text{ و } (3) \text{ ریشه های معادله}$ $x^2 - 13x + 42 = (x-4)(x-9) \rightarrow 4 \text{ و } 9 \text{ ریشه های معادله}$ $Df = (-\infty, -2) \cup (2, 4) \cup (9, +\infty)$	8
$1) [x] - 4 \geq 0 \rightarrow [x] \geq 4$ $[4, +\infty) \rightarrow Df$	$1) \quad 2[x] - 6 > 0$ $2[x] > 6 \rightarrow [x] > 3$ $[x] > 3 \rightarrow Df = [4, +\infty)$
$2) \quad \frac{x+1}{x-1} \geq 0 \rightarrow x \geq -1$ $x \neq 1 \text{ (I)}$ $x^2 + 2x + 1 < 0 \rightarrow \Delta < 0 \rightarrow \text{مربع کامل}$ $4 - x \geq 0 \rightarrow x \leq 4 \text{ (II)}$ $I \cap II \rightarrow Df = [-1, 4) \cup (4, 1]$	$1) \quad [x] - 4 \geq 0 \rightarrow [x] \geq 4 \text{ (I)}$ $2 - [x] \geq 0 \rightarrow [x] \leq 2 \text{ (II)}$ $I \cap II \rightarrow \emptyset \rightarrow Df$