

$$(A-B) \cap B$$

$$\{1\} \cap \{2,3\} \Rightarrow \{(1,2), (1,3)\}$$

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$$m^2 \leq m+2 \quad m^2 - m - 2 \geq 0$$

$$(m+1)(m-2) \leq 0 \Rightarrow \begin{cases} m \leq -1 \\ m \geq 2 \end{cases}$$

کتابچه نیست ✓

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$$(m-2)(m+1) \leq 0 \Rightarrow \begin{cases} m \leq -1 \\ m \geq 2 \end{cases}$$

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$$f(1) = 1 - 1 = 0 = a + b$$

$$f(2) = (2)^2 = 4 = 2a + b \Rightarrow \begin{cases} a = 1 \\ b = -1 \end{cases}$$

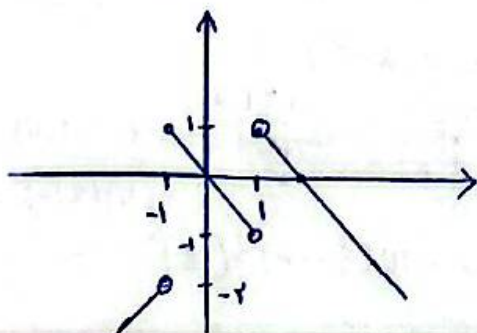
$$ab = -1$$

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$$f(k) = 2k - 3 = 5 - 2k$$

$$2k = 8 \Rightarrow k = \frac{8}{2}$$

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$$D_f = \mathbb{R} - \{1\}$$

$$R_f = (-\infty, 1]$$

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$x^2y^2 - 12xy = -x^2 + 2x - 10$ $\begin{cases} x_1^2y_1^2 - 12y_1 = -x_1^2 + 2x_1 - 10 \\ x_2^2y_2^2 - 12y_2 = -x_2^2 + 2x_2 - 10 \end{cases} \Rightarrow x_1^2y_1^2 - 12y_1 = x_2^2y_2^2 - 12y_2$ $(x_1^2y_1^2 - 12y_1) - (x_2^2y_2^2 - 12y_2) = 0 \Rightarrow (x_1^2y_1^2 - x_2^2y_2^2) - 12(y_1 - y_2) = 0$ $(x_1^2y_1^2 - x_2^2y_2^2) = 12(y_1 - y_2)$ $(x_1^2y_1^2 - x_2^2y_2^2) = 12(y_1 - y_2) \Rightarrow y_1 + y_2 = 3$	$y^2 = \frac{-x^2 - 1}{2}$ $\begin{cases} y_1^2 = \frac{-x_1^2 - 1}{2} \\ y_2^2 = \frac{-x_2^2 - 1}{2} \end{cases} \Rightarrow y_1^2 = y_2^2$ $y_1 = y_2$	الف (۲) ✓
$\left(\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}}\right)^2 = 4$ $\frac{x^2 + y^2}{xy} + 2 = 4$ $x^2 + y^2 = 2xy \Rightarrow (x - y)^2 = 0 \Rightarrow x = y$	$x \leq 0$ $0(\sin y) = y \in \sin 0$ $y \in \sin 0$	الف (۲) مثال نقض ✓
$x \geq 0$ $D_f = [0, 3]$	$\sqrt{\frac{x-1}{x-3}} + \sqrt{\frac{x-3}{x-1}}$ $IR - ([1, 3] \cap (0, 2]) = [0, 1]$	الف (۱, ۷, ۵) ✓
$\sqrt{\frac{(x-2)(x-1)}{(x-2)(x-1)}}$ $D_f = (-\infty, 1] \cup (2, 4) \cup (19, +\infty)$	$\sqrt{(x-2)(x-1)}$ $D_f = IR - ([1, 2] \cup [4, 19])$	الف (۱, ۲, ۵) ✓
$\sqrt{\frac{(x-1)(x-\frac{1}{2})}{(x-1)(x-\frac{1}{2})}}$ $D_f = IR - [\frac{1}{2}, \frac{1}{2}] - [1, 1]$	$\sqrt{(x-1)(x-\frac{1}{2})}$ $D_f = (-\infty, 1] \cup [\frac{1}{2}, +\infty)$	الف (۲) (I) (II) (I) \cap (II) = IR - [\frac{1}{2}, \frac{1}{2}]