

نام و نام خانوادگی: ..... مسکنی هالی ..... پاسخنامه تشریحی تکلیف شماره ۱... کلاس: ..... نام و نام خانوادگی: ..... مسکنی هالی

$$A \times B = \{(1,2), (1,3), (2,2), (2,3), (3,2), (3,3)\}$$

$$B^2 = \{(2,2), (2,3), (3,2), (3,3)\} \Rightarrow A \times B - B^2 = \{(1,2), (1,3)\}$$

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(الف)  $m^2 = m + 2 \Rightarrow m^2 - m - 2 = 0 \rightarrow (m+1)(m-2) \rightarrow m \leq \begin{matrix} -1 \\ +2 \end{matrix} \checkmark$  غلط

$m = -1 \Rightarrow \{(3,1), (2,1), (-3,-1), (-2,-1), (3,1), (-1,4)\} \checkmark$

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ب)  $m^2 = m + 2 \Rightarrow m \leq \begin{matrix} -1 \\ +2 \end{matrix} \quad m = 2 \quad \{(3,4), (2,4), (4,2), (3,2), (-2,2), (-1,3)\} \times$

$\downarrow$   
به ازای هیچ مقادیری تابع نپذیرد  
 $m = -1 \quad \{(3,1), (2,1), (-1,4), (3,1), (-2,-1), (-1,4)\} \times$

$x^2 - 1 = 1 \Rightarrow x^2 = 2 \Rightarrow x = \pm\sqrt{2} \quad \begin{cases} 2a + b = 1 \\ -2a + b = 1 \end{cases} \Rightarrow \begin{matrix} b = 1 \\ a = 0 \end{matrix} \quad a \times b = 0$

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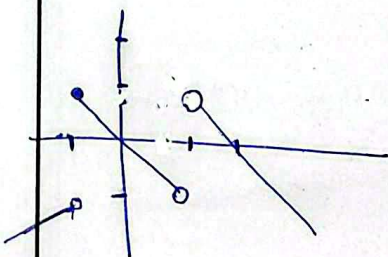
$2x - 3 = 12 \rightarrow 2x - 3 = 8 - 3x \rightarrow x = \frac{15}{5}$   
 $8 - 3x = 12$   
 $x = 12, \quad k = \frac{1}{5}$

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$D_f = (-\infty, 1) \cup (1, +\infty)$

$R_f = (-\infty, 1]$

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| <p>الف) <math>xy^3 = -(x^2+1) \Rightarrow y = \sqrt[3]{\frac{-(x^2+1)}{x}}</math> ✓<br/> <math>x</math> مقدار بی‌نهایت برای <math>y</math> جواب<br/>         نیابست یا آید ← تابع است</p> <p>ب) <math>(x^2-2x+1) + (6y^2-4y+9) = 0 \Rightarrow</math><br/> <math>(x-1)^2 + (2y+3)^2 = 0 \Rightarrow x-1=0 \quad 2y+3=0</math><br/> <math>x=1 \quad y=-\frac{3}{2}</math> ✓ <math>(1, -\frac{3}{2})</math></p>                                                                                                                                                                                                                      | <p>حقیقی مثل نقص <math>x=0 \Rightarrow 0 \times \sin y = y \times \sin 0 \Rightarrow 0 = y \times 0 \Rightarrow 0</math> ✓<br/> <math>x</math> چون <math>y</math> می تواند بی شمار مقدار داشته باشد تابع نیست</p> <p>ب) <math>\sqrt{\frac{x}{y}} = t \Rightarrow t + \frac{1}{t} = 2 \Rightarrow t^2 + 1 = 2t \Rightarrow t^2 + 1 - 2t = 0</math><br/> <math>(t-1)^2 = 0 \Rightarrow t=1 \Rightarrow \sqrt{\frac{x}{y}} = 1 \Rightarrow \frac{x}{y} = 1 \Rightarrow x=y</math> ✓</p> |
| <p>الف) <math>\frac{x-1}{x-2} \geq 0, x \neq 2</math> <math>\frac{1}{x-2} \geq 0</math> <math>x \in (-\infty, 1] \cup (2, \infty)</math> ①<br/> <math>\frac{x-1}{x-2} \geq 0, x \neq 2</math> <math>\frac{0}{x-2} \geq 0</math> <math>x \in (0, 2]</math> ②<br/> <math>\Rightarrow (0, 1]</math></p> <p>ب) <math>x \geq 0 \quad y+1 \geq 0 \Rightarrow y \geq -1 \rightarrow \sqrt{y-1} = \sqrt{3}-\sqrt{x} \rightarrow \sqrt{x} \leq \sqrt{3} \rightarrow x \leq 3</math><br/> <math>\Rightarrow x \in [0, 3] \quad y-1 = (\sqrt{3}-\sqrt{x})^2 \Rightarrow y = x+2-2\sqrt{3x} \rightarrow x \in [0, 3]</math></p>                | <p>الف) <math>x^2 - 5x + 4 \geq 0 \rightarrow x=1 \quad x^2 - 6x + 4 \geq 0 \rightarrow x=1</math><br/> <math>x=4 \quad x=2</math><br/> <math>\Rightarrow x \in (-\infty, 1] \cup [4, \infty) \cup (-\infty, 2) \cup (1, \infty)</math><br/> <math>\Rightarrow x \in (-\infty, 1] \cup (1, 4) \cup (4, \infty)</math></p> <p>ب) <math>\frac{x^2-5x+4}{x^2-6x+4} \geq 0</math> <math>\frac{1}{x-2} \geq 0</math> <math>D = (-\infty, 1] \cup (2, 4) \cup (4, \infty)</math></p>       |
| <p>الف) <math>x^2 - 5x + 2 \geq 0 \rightarrow x &lt; \frac{5}{2}</math><br/> <math>\frac{1}{x-2} \geq 0</math> ①</p> <p>ب) <math>\frac{x^2-5x+2}{x^2-6x+4} \geq 0</math> <math>\frac{1}{x-2} \geq 0</math> <math>D_2 = (-\infty, 1) \cup (\frac{5}{2}, \infty)</math></p> <p>الف) <math>x^2 - 5x + 2 \geq 0 \rightarrow x &lt; \frac{5}{2}</math><br/> <math>\frac{1}{x-2} \geq 0</math> ② <math>D_1 = (-\infty, 1) \cup (\frac{5}{2}, \infty)</math></p> <p>ب) <math>\frac{x^2-5x+2}{x^2-6x+4} \geq 0</math> <math>\frac{1}{x-2} \geq 0</math> <math>D = (-\infty, 1) \cup (1, \frac{5}{2}) \cup [\frac{5}{2}, \infty)</math></p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |