

$$(2 \times 2) - (2 \times 2) = 2$$

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

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$$m^2 = m + 2 \rightarrow m^2 - m - 2 = 0 \rightarrow \Delta = (-1)^2 - 4(-2) = 9$$

$$\frac{1 \pm \sqrt{9}}{2} \begin{cases} 2 & \times \\ -1 & \checkmark \end{cases}$$

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$$1^2 - 1 = 0 \rightarrow a(1) + b = a + b = 0 \rightarrow b = -a$$

$$(1)^2 = 1 \rightarrow a(1) + b = 1 \rightarrow 2a + b = 1 \rightarrow 2a - a = 1 \rightarrow a = 1$$

$$b = -1$$

$$-1 \times 1 = -1$$

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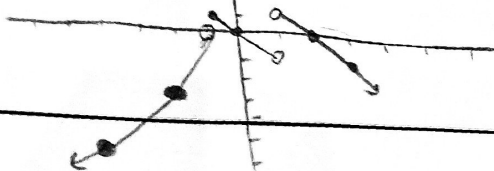
$$\begin{cases} 2K - 3 \\ 5 - 3K \end{cases} \rightarrow 2K - 3 = 5 - 3K \rightarrow 4K = 8 \rightarrow K = \frac{8}{4}$$

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$$\begin{array}{c|cc} n & -\infty & -1 \\ \hline y & -\Delta & -\infty \end{array} \quad \begin{array}{c|cc} n & -1 & -\infty \\ \hline y & 1 & 0 \end{array} \quad \begin{array}{c|cc} n & -\infty & -1 \\ \hline y & 0 & -1 \end{array}$$

$$D = (-\infty, 1) \cup (1, +\infty) \quad R = (-\infty, -1) \cup (-1, 0) \cup (0, 1)$$

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الف) تابع $y = m \rightarrow 2y^2 = -m^2 - 1 \rightarrow y^2 = \frac{-m^2 - 1}{2} \rightarrow y = \sqrt{\frac{-m^2 - 1}{2}}$ ب) $\varepsilon y^2 - 12y + (m^2 - 2m + 1) = 0 \rightarrow \Delta = (12)^2 - 4(\varepsilon)(m^2 - 2m + 1) = 144 - 4\varepsilon(m^2 - 2m + 1) \rightarrow 144 - 4\varepsilon m^2 + 8\varepsilon m - 4\varepsilon = 0 \rightarrow -14 + 4\varepsilon m - 4\varepsilon m^2 = 0$ $-14(m-1)^2 \rightarrow \Delta \leq 0 \rightarrow y = \frac{12}{\varepsilon} \alpha$	6
تابع $y = m \sin y = y \sin m \rightarrow \frac{\sin y}{y} = \frac{\sin m}{m}$ ب) $\sqrt{\frac{m}{y}} + \sqrt{\frac{y}{m}} = 2 \rightarrow m + \frac{1}{m} = 2 \rightarrow m^2 + 1 = 2m \rightarrow m^2 - 2m + 1 = 0$ $(m-1)^2 = 0 \rightarrow m = 1$ تابع $y = m$ $\sqrt{\frac{m}{y}} = 1 \rightarrow \frac{m}{y} = 1 \rightarrow m = y$	7
الف) $\frac{n-1}{n-2} > 0 \rightarrow (-\infty, 1] \cup (2, +\infty)$ ب) $\frac{2-m}{m} > 0 \rightarrow (0, 2]$ $\sqrt{m} + \sqrt{y-1} = 2 \rightarrow m > 0 \rightarrow y-1 > 0 \rightarrow y > 1$ $0 \leq \sqrt{m} \leq 2 \rightarrow 0 \leq \sqrt{y-1} \leq \sqrt{2} \rightarrow 1 \leq y \leq 3$ $\{(m, y) m > 0, 1 \leq y \leq 3, \sqrt{m} + \sqrt{y-1} = \sqrt{2}\}$ $n > 0, y > 1$	8
الف) $\frac{\sqrt{m^2 - 5m + 4}}{\sqrt{m^2 - 6m + 14}} = \frac{(m-1)(m-4)}{\sqrt{-2m+14}} \rightarrow \frac{m \leq 1}{m > 4} \rightarrow D = (-\infty, 1] \cup (4, +\infty)$ ب) $\frac{\sqrt{m^2 - 5m + 4}}{\sqrt{m^2 - 6m + 14}} = \frac{(m-1)(m-4)}{(m-1)(m-4)} \rightarrow D = (-\infty, 1] \cup (4, +\infty)$ $\frac{\sqrt{m^2 - 5m + 4}}{\sqrt{m^2 - 6m + 14}} = \frac{m^2 - 5m + 4}{m^2 - 6m + 14} > 0 \rightarrow \frac{(m-1)(m-4)}{(m-2)(m-7)} > 0 \rightarrow m \neq 2, m \neq 7$ $D = (-\infty, 1] \cup (2, 4] \cup (7, +\infty)$	9
الف) $2m^2 - 4m + 3 > 0 \rightarrow 2m^2 - 4m + 2 = 0 \rightarrow \Delta = (-4)^2 - 4(2)(2) = 0 \rightarrow m = 1$ ب) $\frac{4 \pm 1}{2 \times 2} \rightarrow \frac{5}{4} \rightarrow \frac{5}{4} \leq m \leq 1$ ج) $2m^2 - 5m + 4 = 0 \rightarrow \Delta = (-5)^2 - 4(2)(4) = 9 \rightarrow m = \frac{5 \pm 3}{4} \rightarrow \frac{1}{2} \leq m < 1$ $D = (-\infty, 1) \cup [\frac{5}{4}, +\infty)$ د) $\frac{2m^2 - 4m + 3}{2m^2 - 5m + 4} > 0 \rightarrow 2m^2 - 5m + 4 \neq 0 \rightarrow \frac{(2m-3)(m-1)}{(2m-4)(m-1)} \rightarrow \frac{2m-3}{2m-4} > 0$ $D = (-\infty, 1) \cup (1, \frac{3}{2}) \cup [\frac{5}{4}, +\infty)$	10