

$y = x^2 + 4x + 5$ $\min \left \frac{-b}{2a} \right \Rightarrow \min \begin{cases} -3 \\ -4 \end{cases}$ $x = \frac{-b}{2a} = \frac{-4}{2} = -2$ $y = 4 - 16 + 5 = -7$		۱
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$y = -x^2 + 4x - 3$ $\max \left \frac{-b}{2a} \right \Rightarrow \max \begin{cases} 2 \\ 1 \end{cases}$ $x = \frac{-b}{2a} = \frac{-4}{-2} = 2$ $y = -4 + 8 - 3 = 1$		$y = 0$ $-(x^2 - 4x + 3)$ $-(x-1)(x-3) = 0$ $x = 1 \text{ یا } 3$	۲
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$9 - 16a > 0$ $-16a > -9$ $16a < 9$ $a < \frac{9}{16}$ (الف)	$9 - 16a = 0$ $a = \frac{9}{16}$ (ب)	$9 - 16a < 0$ $-16a < -9$ $a > \frac{9}{16}$ (ج)	$x^2 - 3x + 2a = 0$ $\downarrow$ -3 ± 1 $a = -1 \text{ یا } -2$ (د)
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$x^2 - 2x - 1 = 0$ $x^2 - 2x + 1 = 2$ $(x-1)^2 = 2$ $x-1 = \pm\sqrt{2}$ $x = 1+\sqrt{2} \text{ یا } 1-\sqrt{2}$ (الف)	$x^2 - x - 1 = 0$ $x^2 - x + \frac{1}{4} = \frac{5}{4}$ $(x - \frac{1}{2})^2 = \frac{5}{4}$ $x - \frac{1}{2} = \pm\sqrt{\frac{5}{4}}$ $x = \frac{1+\sqrt{5}}{2} \text{ یا } \frac{1-\sqrt{5}}{2}$ (ب)	۳
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$\Delta = b^2 - 4ac$ $\Delta = 4 + 4 = 8$ $\text{ریشه} = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-2 \pm \sqrt{8}}{2} = \frac{-2 \pm 2\sqrt{2}}{2} = -1 \pm \sqrt{2}$ (الف)	$\Delta = b^2 - 4ac$ $\Delta = 1 + 14 = 15$ $\text{ریشه} = \frac{-1 \pm \sqrt{15}}{2}$ (ب)	۴
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$x^2 - 11x + 28 = 0$ $(x - 7)(x - 4) = 0$ $x = 7 \text{ و } 4$	(الف)	$x^2 + 3x - 28 = 0$ $(x + 7)(x - 4) = 0$ $x = -7 \text{ و } 4$	(ب)	9
$2x^2 - 12x + 10 = 0$ $x^2 - 6x + 5 = 0$ $(x - 5)(x - 1) = 0$ $x = \frac{+5}{1} = 5 \text{ و } \frac{+1}{1} = 1$	(الف)	$3x^2 - 10x + 7 = 0$ $x^2 - 10x + 21 = 0$ $(x - 7)(x - 3) = 0$ $x = \frac{+7}{1} = 7 \text{ و } \frac{+3}{1} = 3$	(ب)	7
$2x^2 - 5x + 2 = 0$ $x^2 - 5x + 4 = 0$ $(x - 4)(x - 1) = 0$ $x = \frac{4}{1} = 4 \text{ و } \frac{1}{1} = 1$	(الف)	$2x^2 + 5x + 2 = 0$ $x^2 + 5x + 4 = 0$ $(x + 4)(x + 1) = 0$ $x = -\frac{4}{1} = -4 \text{ و } -\frac{1}{1} = -1$	(ب)	1
		$2x^2 - 5x + 1 = 0$ $\Delta = b^2 - 4ac \Rightarrow$ $\Delta = 25 - 4 = 21$ $\frac{+5 \pm \sqrt{21}}{4} = \begin{cases} \frac{5 + \sqrt{21}}{4} \\ \frac{5 - \sqrt{21}}{4} \end{cases}$	(ج)	
$S = -\frac{b}{a} \quad P = \frac{c}{a}$ $S = \frac{6}{1} = 6 \quad P = \frac{-2}{1} = -2$ $S^2 - 2P = 36 + 4 = 40$		$S = -\frac{b}{a} \quad P = \frac{c}{a}$ $S = 3 \quad P = -2$ $S^2 - 2P = 9 + 4 = 13$		9
$\begin{pmatrix} 1 \\ 0 \end{pmatrix} + \begin{pmatrix} 9 \\ 2 \end{pmatrix} = 10 \times 2 = 20$ $\frac{1 \times 9}{1} = 9$ $\frac{9 \times 1}{1} = 9$	(الف)	$\begin{pmatrix} 9 \\ 2 \end{pmatrix} - \begin{pmatrix} 1 \\ 2 \end{pmatrix} = 8 \times 2 = 16$ $\frac{9 \times 1}{1 \times 2} = 4.5$ $\frac{1 \times 9}{1} = 9$	(ب)	10