

$2x^2 + 5x - 1 = 0 \quad \text{ریشه ۲}$ $\Delta = 25 - 12 = 13$	$2x^2 - x + 2 = 0 \quad \text{ریشه ای ندارد}$ $\Delta = 1 - 22 = -21$	۶
$2x^2 - 2x + 2 = 0 \quad \text{ریشه ۳}$ $\Delta = 4 - 16 = -12$	$2x^2 - x + 1 = 0 \quad \text{ریشه ای ندارد}$ $\Delta = 1 - 8$	۷
$2x^2 - 3x + a = 0 \quad \Delta = 9 - 8a = 1$ $2x^2 - 3x + a = 0 \quad \Delta = b^2 - 4ac = 9 - 4ac = 0 \Rightarrow ac = \frac{9}{4} = 2.25$ $\Delta = 9 - 4 \times 2.25 = -1$	$a = 1 \quad \text{الف}$ $a = 1, 2.25 \quad \text{ب}$ $a = 2, 1, 2.25 \quad \text{ج}$ $a < 1, 1, 2.25 \quad \text{د}$	۸
	$-\frac{b}{2a} = -\frac{3}{2} = -1.5 = x_s$ $y_s = (-3)^2 + 4(-3) + 5 = 9 + (-12) + 5 = 2$ $y = x^2 + 4x + 5$ $0 = x^2 + 4x + 5 = (x+1)(x+5) \Rightarrow x = -1, -5$	۹
$x_s = -\frac{b}{2a} = +\frac{2}{2} = 1 \quad y_s = -(2)^2 + 8 - 3 = 1$ $(x_s)^2 - 2(x_s - 2) = 9 + 2 = 13$ $(x_s)^2 - 2(5x_s - 2) = 27 + 10 = 37$	الف ب ج د	۱۰

الف $x^2 - 4x + 1 = 0 \quad a=1$

$4 \times 1 = 4 \Rightarrow ab = 4 \Rightarrow b = 4$

$x^2 - 4x + 1 = 0 \Rightarrow x^2 - 4x + 4 = -3 \Rightarrow (x-2)^2 = -3$

$\Rightarrow x - 2 = \pm \sqrt{-3} \Rightarrow x = 2 \pm \sqrt{-3}$

ب $x^2 + 14x + 49 = 0 \quad a=1$

$\Rightarrow 2ab = 14 \Rightarrow ab = 7 \Rightarrow b = 7 \Rightarrow b^2 = 49$

$x^2 + 14x + 49 = 0 \Rightarrow (x+7)^2 = 0 \Rightarrow$

$x + 7 = 0 \Rightarrow x = -7$

الف $x^2 - 3x + 2 = 0$
 $a+b \quad a \times b$
 $-2 + (-1) \quad -2 \times -1$
 $x = 2, 1$

ب $x^2 - 3x - 10 = 0 = (x-5)(x+2) = 0 \Rightarrow$
 $a+b \quad a \times b$
 $-5 + 2 \quad -5 \times 2$
 $x = 5, -2$

الف $x^2 - 3x - 2 = 0$

$\Delta = b^2 - 4ac \Rightarrow \Delta = 3^2 - 4(-2) = 9 + 8 = 17$

$x = \frac{3 \pm \sqrt{17}}{2}$

ب $2x^2 - 5x + \frac{1}{2} = 0$

$\Delta = b^2 - 4ac \Rightarrow \Delta = (-5)^2 - 4(2)(\frac{1}{2}) = 25 - 4 = 21$

$x = \frac{5 \pm \sqrt{21}}{4}$

الف $x^2 - 4x + 4 = 0$

$a+b+c = 0 \Rightarrow x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$x = 2$

ب $2x^2 - 5x + 2 = 0$

$a+c = b \quad x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$x = 2, \frac{1}{2}$

الف $x^2 - 12x + 35 = 0$

$x^2 - 12x + 35 = 0 \Rightarrow (x-5)(x-7) = 0$

$x = 5, 7$

ب $x^2 - 10x + 21 = 0$

$x^2 - 10x + 21 = 0 \Rightarrow (x-3)(x-7) = 0$

$x = 3, 7$