

الف) $x^2 - 2x + 1 = 0$

$\Rightarrow x^2 - 2x = -1$

$x^2 - 2x + 1 = 0$

$(x-1)^2 = 0$

$(x-1) = \pm 0 \Rightarrow x=1$

ب) $x^2 + 1x + 1 = 0$

$x^2 + 1x = -1$

$x^2 + 1x + 1/4 = 9/4$

$(x+1/2)^2 = 9/4$

$(x+1/2) = \pm 3/2 \Rightarrow x = -1, x = -2$

الف) $x^2 - 5x + 4 = 0$

$(x-1)(x-4) = 0$

$\begin{cases} x-1=0 \\ x-4=0 \end{cases} \Rightarrow x=1, x=4$

ب) $x^2 - 5x - 14 = 0$

$(x-7)(x+2) = 0$

$\begin{cases} x-7=0 \\ x+2=0 \end{cases} \Rightarrow x=7, x=-2$

الف) $x^2 - 3x - 8 = 0$

$\Delta = b^2 - 4ac = 9 + 32 = 41$

$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{3 \pm \sqrt{41}}{2}$

ب) $2x^2 - 8x + 6 = 0$

$\Delta = b^2 - 4ac = 64 - 48 = 16$

$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{4 \pm \sqrt{16}}{4}$

الف) $x^2 - 3x + 2 = 0$

$(x-1)(x-2) = 0$

$\begin{cases} x-1=0 \\ x-2=0 \end{cases} \Rightarrow x=1, x=2$

ب) $x^2 + x - 2 = 0$

$x^2 + x - 2 = 0$

$(x-1)(x+2) = 0$

$\begin{cases} x-1=0 \\ x+2=0 \end{cases} \Rightarrow x=1, x=-2$

الف) $x^2 - 12x + 36 = 0$

$x^2 - 12x + 36 = 0$

$(x-6)(x-6) = 0$

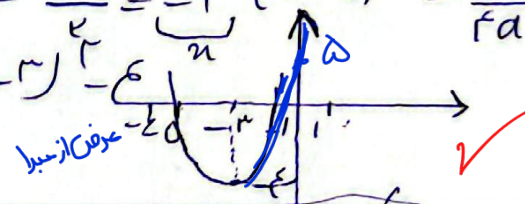
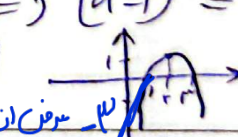
$\begin{cases} x-6=0 \\ x-6=0 \end{cases} \Rightarrow x=6$

ب) $3x^2 - 10x + 3 = 0$

$3x^2 - 10x + 3 = 0$

$(3x-1)(x-3) = 0$

$\begin{cases} 3x-1=0 \\ x-3=0 \end{cases} \Rightarrow x=1/3, x=3$

الف) $2u^2 + 5u - 1 = 0$ $\Delta = b^2 - 4ac = 25 - 12 = 13$ $\Delta = 13 > 0 \Rightarrow$ جواب دارد ✓	ب) $2u^2 - u + 2 = 0$ $\Delta = b^2 - 4ac = -15$ $\Delta = -15 < 0 \Rightarrow$ جواب ندارد ✓
ب) $2u^2 - 5u + 2 = 0$ $\Delta = b^2 - 4ac = 25 - 16 = 9$ $\Delta = 9 > 0 \Rightarrow$ جواب دارد ✓	ت) $2u^2 - u + 1 = 0$ $\Delta = b^2 - 4ac = 1 - 8 = -7$ $\Delta = -7 < 0 \Rightarrow$ جواب ندارد ✓
الف) $2u^2 - 2u + a = 0$ $\Delta = b^2 - 4ac \Rightarrow \Delta = 4 - 4a > 0$ $4 > 4a \Rightarrow \boxed{a < 1}$ ✓ ج) $2u^2 - 2u + a = 0$ $\Delta = b^2 - 4ac \Rightarrow \Delta \leq 0 \Rightarrow \boxed{a \geq 1}$ ✓	ب) $2u^2 - 2u + a = 0$ $\Delta = 0 \Rightarrow 4 - 4a = 0$ $\Rightarrow \boxed{a = 1}$ ✓ د) $2u^2 - 2u + a = 0$ $\Delta \geq 0 \Rightarrow \boxed{a \leq 1}$ ✓
الف) $y = u^2 + 4u + 5$ $\Delta = b^2 - 4ac = 16 - 20 = -4$ $\Delta < 0$ (مستقیم) ✓ ب) $y = (u-2)^2 - 4$ 	مینیمم دارد $\Delta = -4$ $\Delta = b^2 - 4ac = 16 - 20 = -4$ $\Delta < 0$ (مستقیم) ✓
الف) $y = -u^2 + 4u - 3$ $u = -\frac{b}{2a} = -\frac{4}{-2} = 2$ $y = -4 + 8 - 3 = 1$ ب) $y = -(u-2)^2 + 1 \Rightarrow 0 = -(u-2)^2 + 1 \Rightarrow (u-2)^2 = 1$ $u-2 = \pm 1 \Rightarrow \begin{cases} u-2=1 \\ u-2=-1 \end{cases} \Rightarrow u=3 \text{ یا } u=1$ 	حقیقی = ۲ (مستقیم) ✓
الف) $s = -\frac{b}{a} = 2$ $p = \frac{c}{a} = -3 \Rightarrow s^2 - 2p = 4 + 6 = 10$ ✓	
ب) $2v - 3(3x - 2) = 14$ ✓	