

الف) $x^2 - 6x + 9 = 1 \Rightarrow (x-3)^2 = 1 \Rightarrow x-3 = \pm 1$

$x = 4$
 $x = 2$

ب) $x^2 + 8x + 16 = 9 \Rightarrow (x+4)^2 = 9 \Rightarrow x+4 = \pm 3$

$x = -1$
 $x = -7$

الف) $(x-3)(x-2) = 0$

$x = 3$
 $x = 2$

ب) $(x-7)(x+2) = 0$

$x = 7$
 $x = -2$

الف) $\Delta = b^2 - 4ac = 9 + 20 = 29 \Rightarrow x_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{3 \pm \sqrt{29}}{2}$

$\Rightarrow x_1 = \frac{3 + \sqrt{29}}{2}, x_2 = \frac{3 - \sqrt{29}}{2}$

ب) $\Delta = b^2 - 4ac = 12 \Rightarrow x_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-4 \pm \sqrt{12}}{6}$

$x_1 = \frac{-4 + \sqrt{12}}{6}$
 $x_2 = \frac{-4 - \sqrt{12}}{6}$

الف) $a + b + c = 0 \Rightarrow x = 1$

$x = \frac{c}{a} = \frac{1}{1} = 1$

ب) $a + c = b \Rightarrow x = -1$

$x = -\frac{c}{a} = \frac{1}{1}$

الف) $x^2 - 12x + 36 = 0 \Rightarrow (x-6)(x-6) = 0$

$x = \frac{a}{a} = 1$

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

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

$x = \frac{3}{3} = 1$

$x = \frac{7}{7} = 1$

$$\Delta = b^2 - 4ac$$

الف) $\Delta = 13$ ايشتر دارد

ب) $\Delta = -15$ ايشتر ندارد

پ) $\Delta = 0$ ايشتر دارد

ت) $\Delta = -7$ ايشتر ندارد

الترجیح
 $\Delta > 0$ ← معادله در جواب متمایز
 $\Delta = 0$ ← معادله ریشه مضاعف دارد (تکراهی)
 $\Delta < 0$ ← معادله جواب ندارد

$$\Delta = b^2 - 4ac$$

الف) $\Delta = 9 - 1a > 0 \Rightarrow \frac{9}{1} > a$

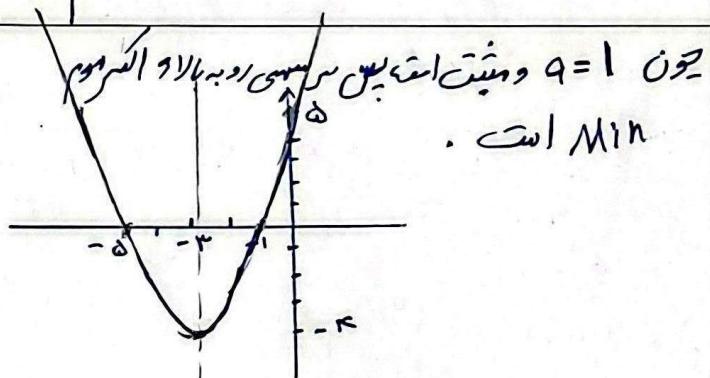
ب) $\Delta = 9 - 1a = 0 \Rightarrow \frac{9}{1} = 0$

ج) $\Delta = 9 - 1a < 0 \Rightarrow \frac{9}{1} < a$

د) $\Delta = 9 - 1a \geq 0 \Rightarrow \frac{9}{1} \geq a$

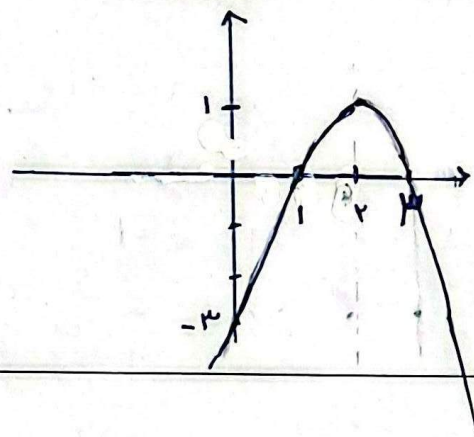
$A = \begin{vmatrix} -\frac{b}{2a} = -\frac{4}{2} = -2 \\ -\frac{\Delta}{4a} = -\frac{16}{4} = -4 \end{vmatrix}$

الف) Min $\begin{vmatrix} -2 \\ -4 \end{vmatrix}$



$A = \begin{vmatrix} -\frac{4}{-2} = 2 \\ 1 \end{vmatrix} \Rightarrow \text{Max} \begin{vmatrix} 2 \\ 1 \end{vmatrix}$

ب) $a + b + c = 0 \rightarrow \begin{cases} c = 1 \\ c = \frac{c}{a} = 3 \end{cases}$



$S = -\frac{b}{a} = 3$ $P = \frac{c}{a} = -2$

الف) $9 + 4 = 13$

ب) $27 + 18 = 45$