

۱.

$$\text{الف) } x^2 - 6x + 1 + 1 = 1 \rightarrow (x-3)^2 = 1$$

$$\rightarrow x-3 = \begin{cases} 1 \rightarrow x=4 \\ -1 \rightarrow x=2 \end{cases}$$

$$\text{ب) } x^2 + 1x + 7 + 9 = 9 \rightarrow (x+4)^2 = 9$$

$$\rightarrow x+4 = \begin{cases} 3 \rightarrow x=-1 \\ -3 \rightarrow x=-7 \end{cases}$$

۲.

$$\text{الف) } (x-2)(x-3) = 0 \quad x \begin{cases} 2 \\ 3 \end{cases}$$

$$\text{ب) } (x+2)(x-7) = 0 \quad x \begin{cases} -2 \\ 7 \end{cases}$$

۳.

$$\text{الف) } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \rightarrow x = \frac{3 \pm \sqrt{9 + 20}}{2} = \frac{3 \pm \sqrt{29}}{2}$$

$$\text{ب) } x = \frac{4 \pm \sqrt{16 - 4}}{4} = \frac{4 \pm \sqrt{12}}{4}$$

۴.

$$\text{الف) } a+b+c=0 \rightarrow x=1, x=\frac{c}{a}=2$$

$$\text{ب) } a+c=b \rightarrow x=-1, x=\frac{-c}{a}=\frac{3}{4}$$

۵.

$$\text{الف) } x^2 - 12x + 35 = 0 \rightarrow (x-5)(x-7) = 0 \quad x \begin{cases} 5 \\ 7 \end{cases}$$

$$\text{ب) } x^2 - 10x + 21 = 0 \rightarrow (x-3)(x-7) = 0 \quad x \begin{cases} 3 \\ 7 \end{cases}$$

۶.

$$\text{الف) } \Delta = b^2 - 4ac \rightarrow \Delta = 25 - 12 = 13 \rightarrow \Delta > 0 \rightarrow \begin{matrix} 2 \\ \text{ریشه} \\ \text{متماثل حقیقی} \end{matrix}$$

$$\text{ب) } \Delta = 1 - 19 = -18 \rightarrow \Delta < 0 \rightarrow \begin{matrix} \text{ریشه} \\ \text{نماد} \end{matrix}$$

$$\rightarrow) 19 - 19 = 0 \rightarrow \Delta = 0 \rightarrow \text{یک ریشه مضاعف دارد}$$

$$\rightarrow) 1 - 18 = -17 \rightarrow \Delta < 0 \rightarrow \text{ریشه ندارد}$$

$b^2 - 4ac$

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$$\uparrow \text{الف) } \Delta > 0 \rightarrow 9 - 18a > 0 \rightarrow 9 > 18a \rightarrow 18a < 9 \rightarrow a < \frac{9}{18}$$

$$\rightarrow) \Delta = 0 \rightarrow 9 - 18a = 0 \rightarrow 18a = 9 \rightarrow a = \frac{9}{18}$$

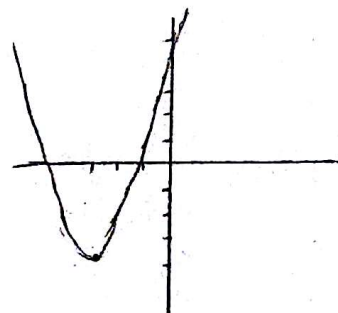
$$\text{ج) } \Delta < 0 \rightarrow 9 - 18a < 0 \rightarrow 9 < 18a \rightarrow 18a > 9 \rightarrow a > \frac{9}{18}$$

$$\rightarrow) a \leq \frac{9}{18}$$

.1

$$\text{الف) ext} \left| \begin{array}{l} \frac{-b}{2a} = \frac{-9}{2} = -4.5 \\ -4 \rightarrow 9 - 18 + 5 = -4 \end{array} \right.$$

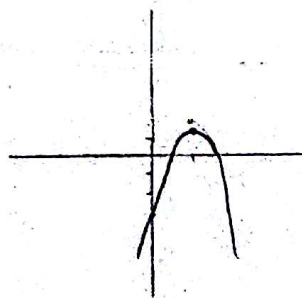
$a > 0 \rightarrow \text{Min}$



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$$\text{الف) ext} \left| \begin{array}{l} \frac{-c}{-2} = 2 \\ 1 \rightarrow -4 + 18 - 3 = 1 \end{array} \right.$$

$a < 0 \rightarrow \text{Max}$



$$\rightarrow) a + b + c = 0 \rightarrow x = 1, x = \frac{c}{a} = 3 \rightarrow \begin{vmatrix} 1 \\ 0 \end{vmatrix}, \begin{vmatrix} 3 \\ 0 \end{vmatrix}$$

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$$S = \frac{-b}{a} = \frac{18}{1} = 18$$

$$P = \frac{c}{a} = \frac{-9}{1} = -9$$

$$\text{الف) } 9 - 2(-9) = 9 + 18 = 27$$

$$\rightarrow) 2V - 3(-9) = 2V + 27 = 45$$