

$$\text{الف) } x^2 - 6x + 8 = 0 \Rightarrow x^2 - 6x + 9 = 1 \Rightarrow (x-3)^2 = 1 \Rightarrow \begin{cases} x-3=1 \\ x-3=-1 \end{cases} \Rightarrow \begin{cases} x=4 \\ x=2 \end{cases}$$

$$\text{ب) } x^2 + 12x + 7 = 0 \Rightarrow x^2 + 12x + 36 = 29 \Rightarrow (x+6)^2 = 29 \Rightarrow \begin{cases} x+6=\sqrt{29} \\ x+6=-\sqrt{29} \end{cases}$$

$$\text{الف) } x^2 - 5x + 6 = (x-3)(x-2) \Rightarrow 3, 2$$

$$\text{ب) } x^2 - 5x - 14 = (x-7)(x+2) \Rightarrow 7, -2$$

$$\text{الف) } x^2 - 3x - 5 = 0 \Rightarrow \frac{3 \pm \sqrt{39}}{2} = \frac{3 + \sqrt{39}}{2}, \frac{3 - \sqrt{39}}{2}$$

$$\text{ب) } 2x^2 - 4x + \frac{1}{2} = 0 \Rightarrow \frac{4 \pm \sqrt{16}}{4} = \frac{4 \pm 4}{4} \Rightarrow \frac{4+4}{4}, \frac{4-4}{4} \Rightarrow 2, 0$$

$$\text{الف) } x^2 - 3x + 2 = 0 \Rightarrow a+b+c=0 \Rightarrow \frac{c}{a} = \frac{2}{1} = 2 \Rightarrow \frac{1}{2} \Rightarrow 1, 2$$

$$\text{ب) } 4x^2 + x - 3 = 0 \Rightarrow a+c=b \Rightarrow \frac{c}{a} = \frac{3}{4} \Rightarrow \frac{3}{4}, -1$$

$$\text{الف) } 5x^2 - 12x + 7 = 0 \Rightarrow x^2 - 12x + 35 = (x-5)(x-7) \Rightarrow 5, 7$$

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

$$2x^2 - 5x - 1 = 0 \Rightarrow \frac{-5 \pm \sqrt{25 - 12}}{-4} \Rightarrow \frac{-5 + \sqrt{13}}{-4}, \frac{-5 - \sqrt{13}}{-4} \Rightarrow \boxed{\frac{5 \pm \sqrt{13}}{4}}$$

چون زیرادکال منفی است و ریشه ای ندارد $\Rightarrow \frac{1 \pm \sqrt{1 - 16}}{4}$ (ب)

چون زیرادکال یک جواب دارد $\Rightarrow \frac{4 \pm \sqrt{16 - 16}}{4} \Rightarrow \frac{4}{4} = 1$ (پ)

چون زیرادکال منفی است و ریشه ای ندارد $\Rightarrow \frac{1 \pm \sqrt{1 - 8}}{4}$ (ت)

$$2x^2 - 3x + a = 0 \Rightarrow \frac{3 \pm \sqrt{9 - 8a}}{-4}$$

الف $a = 1 \Rightarrow \frac{3+1}{-4}, \frac{3-1}{-4} \Rightarrow \frac{4}{-4}, \frac{2}{-4} \Rightarrow \frac{2}{-4}, \frac{1}{-2}$

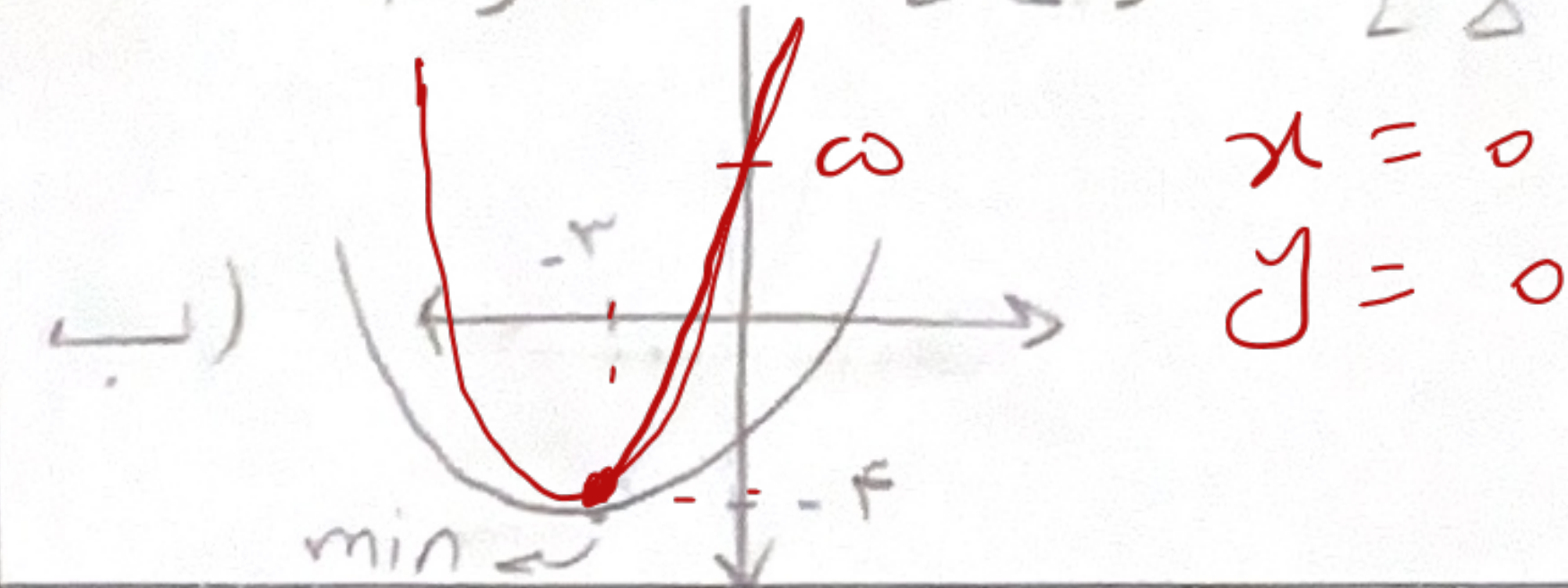
ب $a = \frac{9}{8} \Rightarrow \frac{3+\sqrt{0}}{-4}, \frac{3-\sqrt{0}}{-4} \Rightarrow \frac{3}{-4}$

ج $a = 2 \Rightarrow \frac{3 \pm \sqrt{9-16}}{-4} = \frac{3 \pm \sqrt{-7}}{-4}$ چون زیرادکال منفی است جواب حقیقی ندارد

د $a = 1 \Rightarrow$ مثل بخش ب

$$y = x^2 + 6x + 5$$

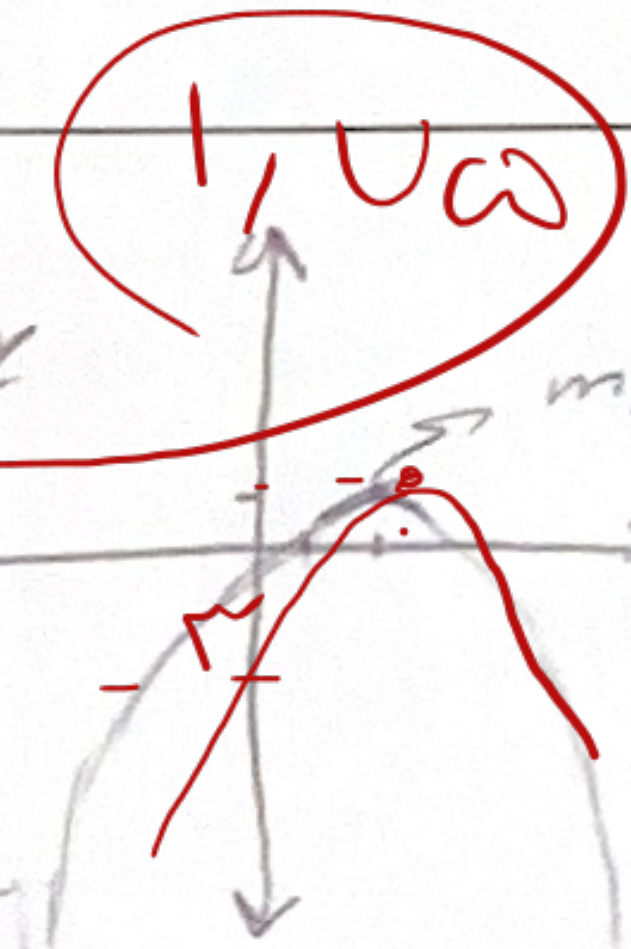
الف $\Rightarrow \left[\frac{-b}{2a} \right] \Rightarrow \left[\frac{-6}{2} \right] \Rightarrow \left[-3 \right] \Rightarrow \left[\frac{-3}{-4} \right] \Rightarrow \left[\frac{3}{4} \right] \Rightarrow \text{نوع min چون } a > 0$



$\infty, 1$

ب $y = -x^2 + 4x - 3$ $x = 0, y = -3$

الف $\Rightarrow \left[\frac{-b}{2a} \right] \Rightarrow \left[\frac{4}{-2} \right] \Rightarrow \left[-2 \right] \Rightarrow \left[\frac{2}{-4+16-3} \right] \Rightarrow \left[\frac{2}{9} \right] \Rightarrow \text{max}$



ب $-x^2 + 4x - 3 = 0 \Rightarrow a+b+c=0 \Rightarrow \begin{bmatrix} 1 \\ 4 \\ -3 \end{bmatrix}$

$x^2 - 3x - 2 = 0 \Rightarrow \frac{3 \pm \sqrt{9+8}}{2} \Rightarrow \frac{3+\sqrt{17}}{2}, \frac{3-\sqrt{17}}{2} \Rightarrow S = \frac{3+\sqrt{17}}{2}, P = \frac{3-\sqrt{17}}{2}$

الف $S^2 - 2P \Rightarrow 9 + 3\sqrt{17} - 2(3-\sqrt{17}) = 13$

ب $S^3 - 3SP \Rightarrow 27 + 27\sqrt{17} - 3(3-\sqrt{17})(3+\sqrt{17}) = 45$

الن

سوال ٧

$$(-3)^2 - 4(2)(a) > 0 \rightarrow 9 - 8a > 0$$

$$ج.) (-3)^2 - 4(2)(a) < 0 \rightarrow 9 - 8a < 0$$

$$٦) (-3)^2 - 4(2)(a) > 0 \rightarrow a \leq \frac{9}{8}$$