

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ... کلاس ... دهم دبیرستان B

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

$$\text{ب) } x^2 + 8x + 7 = 0 \rightarrow x^2 + 8x + 14 = -4 \Rightarrow (x+4)^2 = 4 \Rightarrow x+4 = \pm 2 \Rightarrow \begin{cases} x=-2 \\ x=-6 \end{cases}$$

$$\text{الف) } x^2 - 5x + 6 = 0 \rightarrow (x-2)(x-3) = 0 \Rightarrow \begin{cases} x=2 \\ x=3 \end{cases}$$

$$\text{ب) } x^2 - 5x - 14 = 0 \rightarrow (x+2)(x-7) = 0 \Rightarrow \begin{cases} x=-2 \\ x=7 \end{cases}$$

$$\text{الف) } x^2 - 3x - 4 = 0 \rightarrow \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{+3 \pm \sqrt{9+16}}{2} = \begin{cases} x = \frac{3+\sqrt{25}}{2} \\ x = \frac{3-\sqrt{25}}{2} \end{cases}$$

$$\text{ب) } 2x^2 - 5x + \frac{1}{2} = 0 \rightarrow \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{+5 \pm \sqrt{14}}{4} = \begin{cases} x = \frac{5+\sqrt{14}}{4} = 1 + \frac{\sqrt{14}}{4} \\ x = \frac{5-\sqrt{14}}{4} = 1 - \frac{\sqrt{14}}{4} \end{cases}$$

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

$$\text{ب) } 4x^2 + x - 5 = 0 \rightarrow \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-1 \pm \sqrt{1+80}}{8} = \begin{cases} x = \frac{4}{1} = 4 \\ x = -1 \end{cases}$$

$$\text{الف) } 5x^2 - 12x + 7 = 0 \rightarrow x^2 - 12x + 35 = 0 \Rightarrow (x-5)(x-7) = 0 \Rightarrow \begin{cases} x = \frac{5}{5} = 1 \\ x = \frac{7}{5} = 1.4 \end{cases}$$

$$\text{ب) } 3x^2 - 6x + 3 = 0 \Rightarrow x^2 - 2x + 1 = 0 \Rightarrow (x-1)(x-1) = 0 \Rightarrow \begin{cases} x = \frac{2}{3} \\ x = 1 \end{cases}$$

الف) $2x^2 + 4x - 1 = 0 \Rightarrow \Delta = 2^2 - 4(-1) = 12 > 0 \Rightarrow$ دو ریشه

ب) $x^2 - x + 2 = 0 \Rightarrow \Delta = 1 - 1^2 = -1 < 0 \Rightarrow$ ریشه ندارد

ج) $2x^2 - 4x + 2 = 0 \Rightarrow \Delta = 16 - 16 = 0 = 0 \Rightarrow$ یک ریشه مضاعف

د) $x^2 - x + 1 = 0 \Rightarrow \Delta = 1 - 4 = -3 < 0 \Rightarrow$ ریشه ندارد

الف) $\Delta > 0 \Rightarrow 9 - 4a > 0 \Rightarrow 4a < 9 \Rightarrow a < \frac{9}{4}$

ب) $\Delta = 0 \Rightarrow 9 - 4a = 0 \Rightarrow a = \frac{9}{4}$

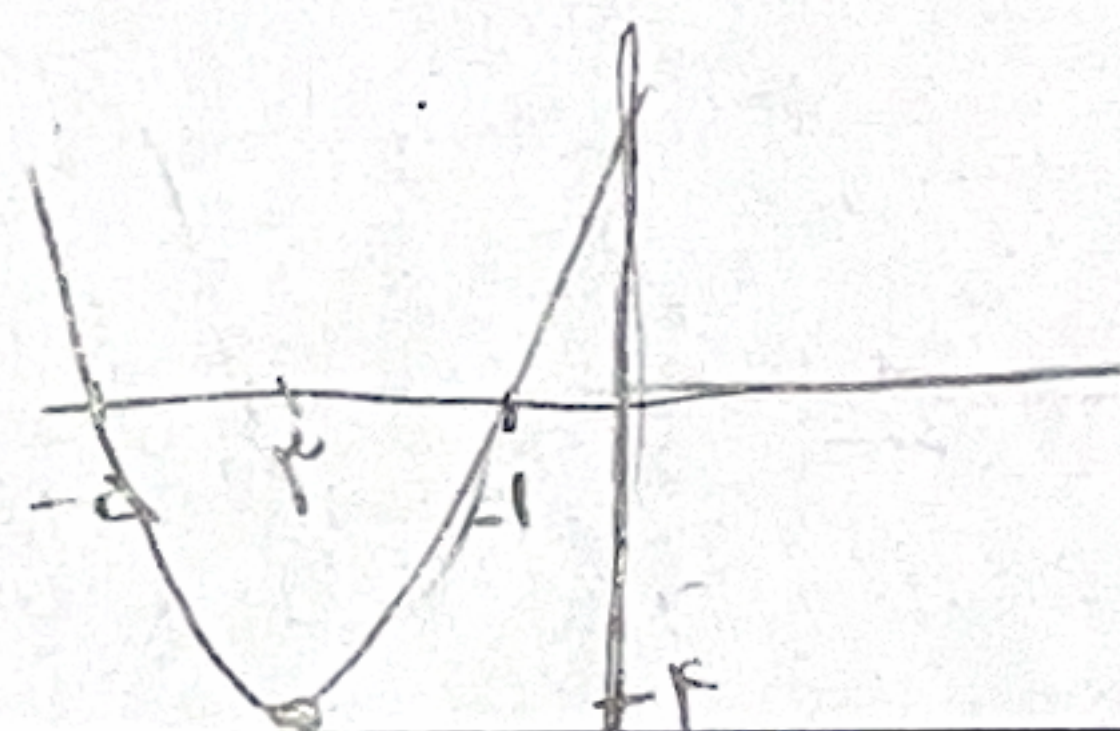
ج) $\Delta < 0 \Rightarrow 9 - 4a < 0 \Rightarrow a > \frac{9}{4}$

د) $\Delta \geq 0 \Rightarrow 9 - 4a \geq 0 \Rightarrow a \leq \frac{9}{4}$

الف) $\text{ext} \begin{cases} -\frac{b}{2a} \\ -\frac{\Delta}{4ac} \end{cases} \Rightarrow \begin{cases} -\frac{4}{2} = -2 \\ -\frac{(16 - 4a)}{4} = -1 \end{cases} \Rightarrow \min \Rightarrow a > 0$

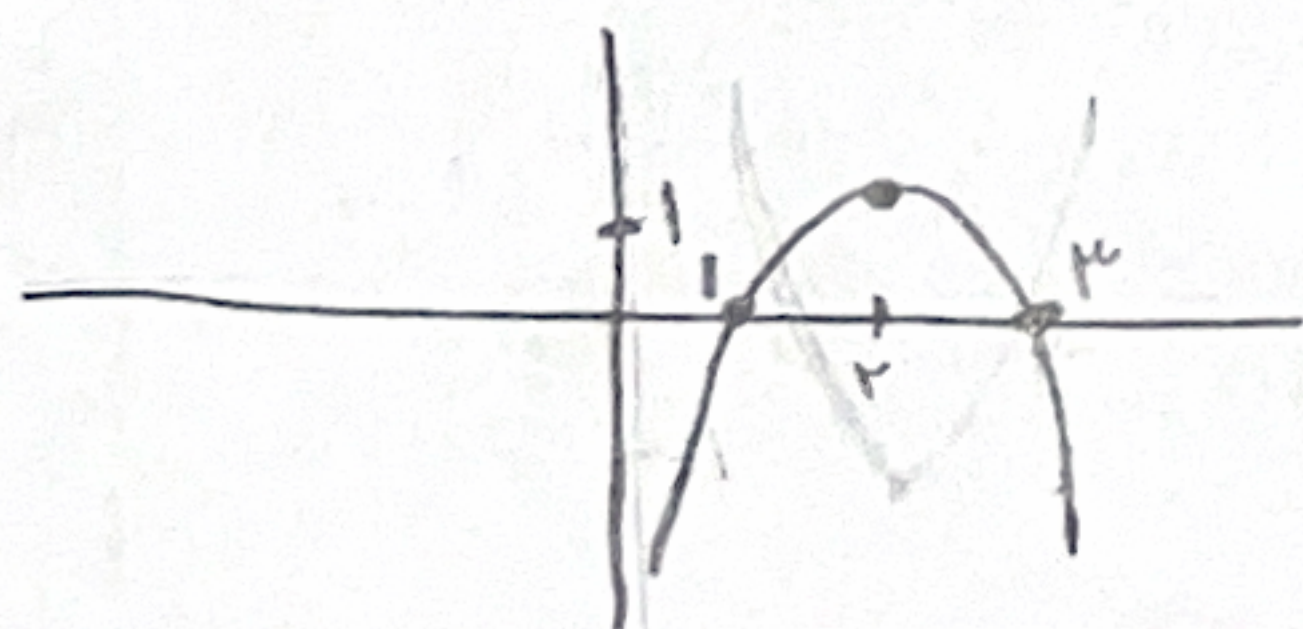
$y = x^2 + 4x + a$
 $(x+1)(x+a)$
 $\begin{cases} x = -a \\ x = -1 \end{cases}$

ب) $y = x^2 + 4x + a \Rightarrow \begin{cases} -2 \\ -1 \end{cases}$
 min



الف) $\text{ext} \begin{cases} -\frac{b}{2a} \\ -\frac{\Delta}{4ac} \end{cases} \Rightarrow \begin{cases} -\frac{4}{-2} = 2 \\ -\frac{f}{-4} = +1 \end{cases} \Rightarrow a < 0 = \max$

$y = -x^2 + 4x - 1$
 $y = -(x-1)(x-3)$
 $\begin{cases} x = 1 \\ x = 3 \end{cases}$



الف) $S = \frac{-b}{a} = \frac{+4}{1} = 4$, $P = \frac{c}{a} = -1 \Rightarrow S^2 - 2P = 16 - 2 = 14$

ب) $S^2 - 2SP = 16 + 12 = 28$