

نام و نام خانوادگی شماره کلاس دبیر تاریخ: ۱۸/۳/۱۴۰۰

$$\text{الف) } x^2 - 4x + 8 = 0 \Rightarrow x^2 - 4x + 9 = 1 \Rightarrow (x-2)^2 = 1 \Rightarrow x-2 = \pm 1 \Rightarrow \begin{cases} x_1 = 1+2=3 \\ x_2 = -1+2=1 \end{cases}$$

$$\text{ب) } x^2 + 1x + 7 = 0 \Rightarrow x^2 + 1x + 15 = 9 \Rightarrow (x+4)^2 = 9 \Rightarrow x+4 = \pm 3 \Rightarrow \begin{cases} x_1 = -1 \\ x_2 = -7 \end{cases}$$

$$\text{الف) } x^2 - 5x + 6 = 0 \Rightarrow (x-2)(x-3) = 0 \Rightarrow \begin{cases} x_1 = 2 \\ x_2 = 3 \end{cases}$$

$$\text{ب) } x^2 - 5x - 14 = 0 \Rightarrow (x+2)(x-7) = 0 \Rightarrow \begin{cases} x_1 = -2 \\ x_2 = 7 \end{cases}$$

$$\text{الف) } x^2 - 3x - 5 = 0 \Rightarrow \begin{cases} x_1 = \frac{3 + \sqrt{39}}{2} \\ x_2 = \frac{3 - \sqrt{39}}{2} \end{cases}$$

$$\Delta = b^2 - 4ac = 9 - (-20) = 29$$

$$\text{ب) } 2x^2 - 4x + \frac{1}{2} = 0 \Rightarrow \begin{cases} x_1 = \frac{-b + \sqrt{\Delta}}{2a} = \frac{4 + \sqrt{17}}{4} = \frac{2 + \sqrt{17}}{2} = 1 + \frac{\sqrt{17}}{2} \\ x_2 = \frac{-b - \sqrt{\Delta}}{2a} = \frac{4 - \sqrt{17}}{4} = \frac{2 - \sqrt{17}}{2} = 1 - \frac{\sqrt{17}}{2} \end{cases}$$

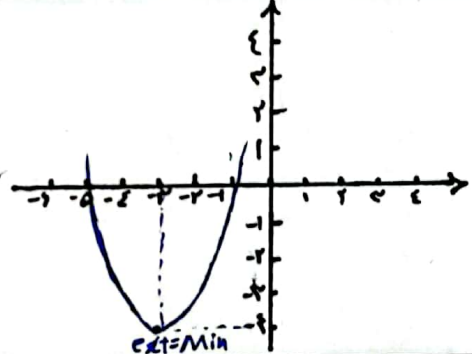
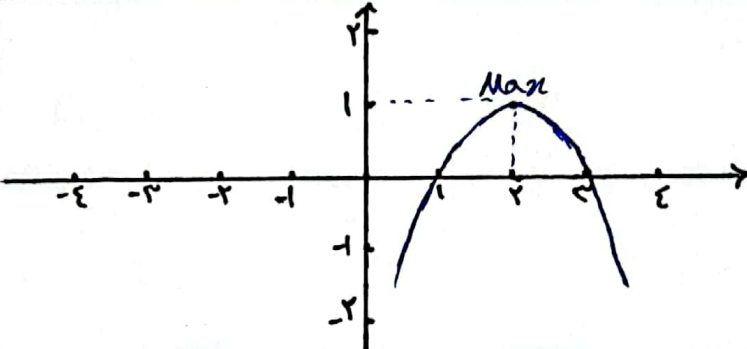
$$\Delta = b^2 - 4ac = 16 - 2 = 14$$

$$\text{الف) } x^2 - 3x + 2 = 0 \xrightarrow{a+b+c=0} \begin{cases} x_1 = 1 \\ x_2 = \frac{c}{a} = \frac{2}{1} = 2 \end{cases}$$

$$\text{ب) } 4x^2 + x - 3 = 0 \xrightarrow{a+c=b} \begin{cases} x_1 = -1 \\ x_2 = -\frac{c}{a} = -\frac{3}{4} \end{cases}$$

$$\text{الف) } 5x^2 - 12x + 7 = 0 \Rightarrow x^2 - 12x + 35 = 0 \Rightarrow (x-5)(x-7) = 0 \Rightarrow \begin{cases} x_1 = 5 \\ x_2 = 7 \end{cases}$$

$$\text{ب) } 2x^2 - 10x + 7 = 0 \Rightarrow x^2 - 5x + 3.5 = 0 \Rightarrow (x-2)(x-7) = 0 \Rightarrow \begin{cases} x_1 = 2 \\ x_2 = 7 \end{cases}$$

الف) $2x^2 + 5x - 1 = 0 \Rightarrow \Delta = 25 + 12 = 37 \rightarrow$ جواب ندارد ب) $2x^2 - x + 2 = 0 \Rightarrow \Delta = 1 - 16 = -15 \rightarrow$ جواب ندارد پ) $2x^2 - 6x + 4 = 0 \Rightarrow \Delta = 36 - 32 = 4 \rightarrow$ جواب دارد ت) $2x^2 - x + 1 = 0 \Rightarrow \Delta = 1 - 8 = -7 \rightarrow$ جواب ندارد	6
الف) $\Delta > 0 \Rightarrow b^2 - 4ac > 0 \Rightarrow 9 - 16a > 0 \Rightarrow a < \frac{9}{16}$ ب) $\Delta = 0 \Rightarrow b^2 - 4ac = 0 \Rightarrow 9 - 16a = 0 \Rightarrow a = \frac{9}{16}$ ج) $\Delta < 0 \Rightarrow b^2 - 4ac < 0 \Rightarrow 9 - 16a < 0 \Rightarrow a > \frac{9}{16}$ د) $\Delta \geq 0 \Rightarrow b^2 - 4ac \geq 0 \Rightarrow 9 - 16a \geq 0 \Rightarrow a \leq \frac{9}{16}$	7
الف) $\Delta = 36 - 4 = 32$ ب) $ext = \frac{-b}{2a} = \frac{-2}{-4} = \frac{1}{2}$ Min $x_1 = 1$ $x_2 = -5$ 	8
الف) $ext = \frac{1}{2}$ ب) Max $x_1 = 1$ $x_2 = 3$ 	9
الف) $\delta^2 - 2p = \frac{b^2}{a^2} - \frac{4c}{a} = 9 + 12 = 21$ ب) $\delta^2 - 4sp = -\frac{b^2}{a^2} + 4 \frac{bc}{a} = 21 + 12 = 33$	10