

نام و نام خانوادگی پاسخنانه تشریحی تکلیف شماره کلاس B

الف) $x^2 - 6x + 8 = 0 \rightarrow x^2 - 6x + \frac{9}{4} - 1 = 0 \rightarrow (x-3)^2 - 1 = 0 \Rightarrow (x-3)^2 = 1 \Rightarrow |x-3| = 1$

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

ب) $x^2 + 8x + 7 = 0 \rightarrow x^2 + 8x + \frac{16}{4} - 9 = 0 \Rightarrow (x+4)^2 - 9 = 0 \Rightarrow (x+4)^2 = 9 \Rightarrow |x+4| = 3$

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

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

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

الف) $x^2 - 3x - 6 = 0$ $\Delta = b^2 - 4ac = (-3)^2 - (4 \times (-6) \times 1) = 9 - (-24) = 33$

$$\begin{cases} x = \frac{-b + \sqrt{\Delta}}{2a} = \frac{3 + \sqrt{33}}{2} \\ x = \frac{-b - \sqrt{\Delta}}{2a} = \frac{3 - \sqrt{33}}{2} \end{cases}$$

ب) $2x^2 - 4x + \frac{1}{2} = 0$ $\Delta = b^2 - 4ac = 16 - (2 \times \frac{1}{2} \times \frac{1}{2}) = 15$

$$\begin{cases} x = \frac{-b + \sqrt{\Delta}}{2a} = \frac{2 + \sqrt{15}}{4} = \frac{1 + \sqrt{15}}{2} \\ x = \frac{-b - \sqrt{\Delta}}{2a} = \frac{2 - \sqrt{15}}{4} = \frac{1 - \sqrt{15}}{2} \end{cases}$$

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

ب) $2x^2 + x - 3 = 0 \Rightarrow x^2 + x - \frac{3}{2} = 0 \Rightarrow (x+2)(x-1) = 0$

$$\begin{cases} x+2=0 \\ \Rightarrow x=-2 \\ x-1=0 \\ \Rightarrow x=1 \end{cases}$$

الف) $x^2 - 12x + 36 = 0 \Rightarrow (x-6)(x-6) = 0 \Rightarrow \begin{cases} x-6=0 \\ \Rightarrow x=6 \\ x-6=0 \\ \Rightarrow x=6 \end{cases}$

ب) $2x^2 - 10x + 12 = 0 \Rightarrow x^2 - 5x + 6 = 0 \Rightarrow (x-3)(x-2) = 0$

$$\begin{cases} x-3=0 \\ \Rightarrow x=3 \\ x-2=0 \\ \Rightarrow x=2 \end{cases}$$

الف) $2x^2 + 5x - 1 = 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow \Delta = 5^2 - (4 \times 2 \times (-1)) = 13 \Rightarrow \Delta > 0 \Rightarrow$ معادله 2 ریشه دارد ✓

ب) $2x^2 - x + 2 = 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow \Delta = (-1)^2 - (4 \times 2 \times 2) = -15 \Rightarrow \Delta < 0 \Rightarrow$ معادله جواب ندارد ✓

ج) $2x^2 + x + 2 = 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow \Delta = (-1)^2 - (4 \times 2 \times 2) = -15 \Rightarrow \Delta < 0 \Rightarrow$ معادله جواب ندارد ✓

د) $2x^2 - x + 1 = 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow \Delta = (-1)^2 - (4 \times 2 \times 1) = -7 \Rightarrow \Delta < 0 \Rightarrow$ معادله جواب ندارد ✓

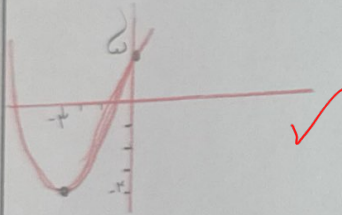
الف) $\Delta > 0 \Rightarrow b^2 - 4ac > 0 \Rightarrow (-2)^2 - 4(2)(\alpha) > 0$
 $4 - 8\alpha > 0 \Rightarrow 4 > 8\alpha \Rightarrow \frac{4}{8} > \alpha \Rightarrow \boxed{\frac{1}{2} > \alpha}$ ✓

ب) $\Delta = 0 \Rightarrow b^2 - 4ac = 0 \Rightarrow (-2)^2 - 4(2)(\alpha) = 0$
 $4 - 8\alpha = 0 \Rightarrow 4 = 8\alpha \Rightarrow \boxed{\alpha = \frac{1}{2}}$ ✓

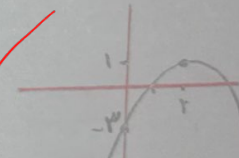
ج) $\Delta < 0 \Rightarrow b^2 - 4ac < 0 \Rightarrow (-2)^2 - 4(2)(\alpha) < 0$
 $4 - 8\alpha < 0 \Rightarrow 4 < 8\alpha \Rightarrow \boxed{\frac{1}{2} < \alpha}$ ✓

اگر $\Delta < 0$ باشد معادله جواب ندارد پس با توجه به (ج) $R = (\frac{1}{2}, +\infty)$ ✓

نقطه تقاطع استریم = به رسم رار
 مختصات (الف) $\begin{cases} x = \frac{-b}{2a} = \frac{-2}{4} = -\frac{1}{2} \\ y = \frac{-\Delta}{4a} = \frac{-(b^2 - 4ac)}{4a} = \frac{4ac - b^2}{4a} = \frac{4(2)(\alpha) - 4}{4} = \frac{8\alpha - 4}{4} = \frac{2\alpha - 1}{1} = \boxed{2\alpha - 1} \end{cases}$ ✓



مختصات (ب) $\begin{cases} x = \frac{-b}{2a} = \frac{-2}{4} = -\frac{1}{2} \\ y = \frac{-\Delta}{4a} = \frac{-(b^2 - 4ac)}{4a} = \frac{4ac - b^2}{4a} = \frac{4(2)(\alpha) - 4}{4} = \frac{8\alpha - 4}{4} = \frac{2\alpha - 1}{1} = \boxed{2\alpha - 1} \end{cases}$ ✓



ب) $-x^2 + 2x - 3 = 0 \Rightarrow -(x^2 - 2x + 3) = 0 \Rightarrow -(x-1)(x-2) = 0$
 $\begin{cases} x-1=0 \Rightarrow \boxed{x=1} \Rightarrow |0| \\ x-2=0 \Rightarrow \boxed{x=2} \Rightarrow |0| \end{cases}$ ✓

در صورتی که محور x را قطع می کند
 پس برابر 0 باشد

حاصل جمع ریشه: $-\frac{b}{a} = \frac{-(-2)}{1} = 2$ ✓

الف) $s^2 - 2p = 3 - 2(-2) = 9 \Rightarrow \boxed{13}$ ✓

ب) $s^2 - 3sp = 3 - 3(2)(-2) = 15 \Rightarrow \boxed{15}$ ✓

حاصل ضرب ریشه: $\frac{c}{a} = \frac{-2}{1} = -2$ ✓

✓