

$$\text{الف) } \Delta = b^2 - 4ac \rightarrow \Delta = 15 - 4(-3)(-1) = 13 \rightarrow \Delta > 0$$

۲ ریشه‌ی حقیقی دارد

$$\text{ب) } \Delta = b^2 - 4ac \rightarrow \Delta = 1 - 4(2)(2) = -15 \rightarrow \Delta < 0$$

$$\text{پ) } \Delta = b^2 - 4ac \rightarrow \Delta = 14 - 4(2)(2) = 0 \rightarrow \Delta = 0$$

۱ ریشه‌ی حقیقی دارد

$$\text{د) } \Delta = b^2 - 4ac \rightarrow \Delta = 1 - 4(2)(1) = -7 \rightarrow \Delta < 0$$

۰ ریشه‌ی حقیقی ندارد

$$\Delta = (-2)^2 - 4(2)(a) \rightarrow \Delta = 9 - 11a \rightarrow \Delta > 0$$

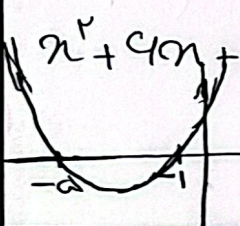
$9 - 11a > 0 \rightarrow a < \frac{9}{11}$

$$\Delta = 0 \rightarrow 9 - 11a = 0 \rightarrow 11a = 9 \rightarrow a = \frac{9}{11}$$

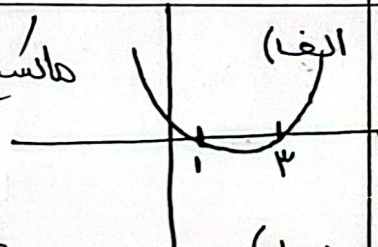
$$\Delta < 0 \rightarrow 9 - 11a < 0 \rightarrow a > \frac{9}{11}$$

$$\Delta \geq 0 \rightarrow 9 - 11a \geq 0 \rightarrow a \leq \frac{9}{11}$$

$$\text{ext} \left| \begin{array}{c} -\frac{b}{2a} \\ -\frac{\Delta}{4a} \end{array} \right| \rightarrow \text{ext} \left| \begin{array}{c} -1 \\ -1 \end{array} \right| \rightarrow a = 1 > 0 \rightarrow \text{مینیم دار}$$

$$x^2 + 4x + 5 = 0 \rightarrow (x+1)(x+5) = 0 \rightarrow \begin{cases} x = -1 \\ x = -5 \end{cases}$$


$$\text{ext} \left| \begin{array}{c} -\frac{b}{2a} \\ -\frac{\Delta}{4a} \end{array} \right| \rightarrow \text{ext} \left| \begin{array}{c} 1 \\ 1 \end{array} \right| \rightarrow a = -1 < 0 \rightarrow \text{maksیم دار}$$



$$y = 0 \rightarrow -x^2 + 4x - 3 = 0 \xrightarrow{\times -1} x^2 - 4x + 3 = 0$$

$$(x-1)(x-3) = 0 \rightarrow \begin{cases} x = 1 \\ x = 3 \end{cases}$$

۲ نقطه‌ی (۱, ۰) و (۳, ۰) محور x را قطع می‌کند.

$$S = -\frac{b}{a} = 4 \quad P = \frac{c}{a} = -3$$

$$\text{الف) } S^2 - 4P = 4^2 - 4(-3) = 16 + 12 = 28$$

$$\text{ب) } S^3 - 3SP = 4^3 - 3(4)(-3) = 64 + 36 = 100$$

نام و نام خانوادگی ... پاسخنامه تشریحی تکلیف شماره ... کلاس ...	
	الف) $x^2 - 4x + 9 = 7 \rightarrow (x-2)^2 = 1 \rightarrow x-2 = \pm 1$ $\rightarrow x = 2 \quad x = 4$ ب) $x^2 + 18x + 14 = 9 \rightarrow (x+4)^2 = 9 \rightarrow x+4 = \pm 3$ $\rightarrow x = -1 \quad x = -7$
الف) $(x-2)(x-3) = 0 \rightarrow x = 2$ $\rightarrow x = 3$ ب) $(x-5)(x+2) = 0 \rightarrow x = 5$ $\rightarrow x = -2$	الف) $x = \frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow x = \frac{3 \pm \sqrt{19}}{2} \rightarrow x = \frac{3 + \sqrt{19}}{2}$ $\rightarrow x = \frac{3 - \sqrt{19}}{2}$ ب) $x = \frac{-(-4) \pm \sqrt{12}}{2(2)} \rightarrow x = \frac{4 \pm \sqrt{12}}{4} \rightarrow x = 1 + \frac{\sqrt{3}}{2}$ $\rightarrow x = 1 - \frac{\sqrt{3}}{2}$
الف) $(x-1)(x+2) = 0 \rightarrow x = 1$ $\rightarrow x = 2$ ب) $x = \frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow x = \frac{-1 \pm \sqrt{1 - (-4)}}{1} \rightarrow x = \frac{3}{2}$ $\rightarrow x = -1$	الف) $x^2 - 12x + 36 = 0 \rightarrow (x-6)(x-6) = 0 \rightarrow x = \frac{6}{6} = 1$ $x = \frac{6}{6} = 1$ ب) $x^2 - 10x + 21 = 0 \rightarrow (x-3)(x-7) \rightarrow x = \frac{3}{2}$ $\rightarrow x = \frac{7}{2} = 1$