

نام و نام خانوادگی: با استفاده از تشریحی، تکلیف شماره ۱... کلاس: درس: B

الف) $x^2 - 9x + 1 = 0 \Rightarrow x^2 - 9x + 1 + 1 = 1 \Rightarrow$
 $x^2 - 9x + 9 = 1 \Rightarrow (x - 3)^2 = 1 \Rightarrow x = 3, x = 2$

ب) $x^2 + 11x + 1 = 0 \Rightarrow x^2 + 11x + 1 + 9 = 9 \Rightarrow x^2 + 11x + 10 = 9$
 $(x + 5)^2 = 9 \Rightarrow x = -1, x = -5$

الف) $x^2 - ax + 7 = 0 \Rightarrow x^2 + (a+b)x + ab = 0 \Rightarrow$
 $(x-2)(x-3) = 0 \Rightarrow x = 2, x = 3$

ب) $x^2 - ax - 12 = 0 \Rightarrow x^2 + (a+b)x + ab = 0 \Rightarrow$
 $(x-5)(x+2) = 0 \Rightarrow x = 5, x = -2$

الف) $x^2 - 3x - 4 = 0 \Rightarrow x = \frac{-b \pm \sqrt{\Delta}}{2a} \Rightarrow x = \frac{-2 \pm \sqrt{29}}{2}$
 $x = \frac{-3 + \sqrt{29}}{2}, x = \frac{-3 - \sqrt{29}}{2}$

ب) $2x^2 - 4x + \frac{1}{2} = 0 \Rightarrow x = \frac{-b \pm \sqrt{\Delta}}{2a} \Rightarrow x = \frac{+2 \pm \sqrt{12}}{2}$
 $x = \frac{+2 - \sqrt{12}}{2}, x = \frac{+2 + \sqrt{12}}{2}$

الف) $x^2 - 3x + 2 = 0 \Rightarrow (x-1)(x-2) = 0 \Rightarrow x = 1, x = 2$
 جواب مشترک: ۲

ب) $4x^2 + x - 3 = 0 \Rightarrow x^2 + x - 12 = 0 \Rightarrow (x-3)(x+4) = 0$
 (روسی) $x = 3 \Rightarrow x = \frac{3}{4}$
 $x = -4 \Rightarrow x = -\frac{4}{3} = -1$

الف) $5x^2 - 12x + 7 = 0 \Rightarrow x^2 - 12x + 20 = 0 \Rightarrow (x-4)(x-5) = 0$
 $x = 4 \Rightarrow x = \frac{4}{5} = 1$
 $x = 5 \Rightarrow x = \frac{5}{5} = 1$

ب) $3x^2 - 10x + 7 = 0 \Rightarrow x^2 - 10x + 21 = 0 \Rightarrow (x-3)(x-7) = 0$
 $x = 3 \Rightarrow x = \frac{3}{3} = 1$
 $x = 7 \Rightarrow x = \frac{7}{3}$

$$\text{الف)} -3x^2 + 6x - 1 = 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow \Delta = 12 - 12 = 0$$

$\Delta > 0$ ۲ ریشه‌ی حقیقی دارد

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

$\Delta < 0$ جوابی در مجموعه اعداد حقیقی ندارد

$$\text{ج)} 2x^2 - 2x + 2 = 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow \Delta = 4 - 16 = -12 \Rightarrow \Delta < 0$$

دو ریشه‌ی مساوی و یک ریشه مضاعف

$$\text{د)} 2x^2 - x + 1 = 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow \Delta = 1 - 8 = -7 \Rightarrow \Delta < 0$$

جوابی در مجموعه اعداد حقیقی ندارد

$$\text{الف)} 2x^2 - 3x + a = 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow \Delta = 9 - 4a \Rightarrow a = 0 \text{ با } \Delta > 0$$

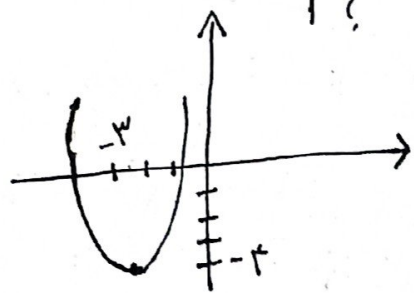
$$\text{ب)} 2x^2 - 3x + a = 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow \Delta = 9 - 4a \Rightarrow a = \frac{9}{4} \text{ با } \Delta = 0$$

$$\text{ج)} 2x^2 - 3x + a = 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow \Delta = 9 - 4a \Rightarrow a = \frac{9}{4} \text{ با } \Delta < 0$$

$$\text{د)} 2x^2 - 3x + a = 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow \Delta = 9 - 4a \Rightarrow a = \frac{9}{4} \text{ با } \Delta > 0$$

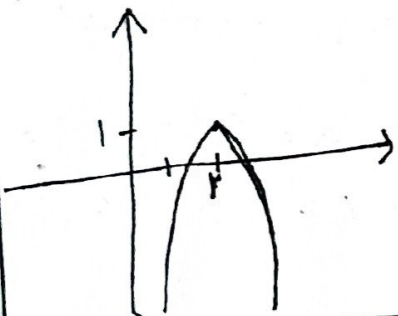
$$\text{الف)} y = x^2 + 6x + 5 \Rightarrow \text{ext} \left| \begin{array}{c} -\frac{b}{2a} \\ -3 \\ -5 \end{array} \right. \Rightarrow \left| \begin{array}{c} -\frac{6}{2} = -3 \\ -5 \end{array} \right. \Rightarrow y = 9 - 18 + 5 = -4$$

ب)



$$\text{الف)} y = -x^2 + 4x - 3 \Rightarrow \text{ext} \left| \begin{array}{c} -\frac{b}{2a} \\ 2 \\ -1 \end{array} \right. \Rightarrow \left| \begin{array}{c} -\frac{4}{-2} = 2 \\ -1 \end{array} \right.$$

$$y = -4 + 4 - 3 = -3$$



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

$$S = -\frac{b}{a} \Rightarrow \frac{4}{-1} = -4 \quad \text{الف)} 3^2 - 2(-2) = 9 + 4 = 13$$

$$P = \frac{c}{a} \Rightarrow \frac{-2}{-1} = 2 \quad \text{ب)} 3^3 - 3x^2 - 2x^3 = 27 + 18 = 45$$