۱۹/۷۵

نام و نام خانوادگی ....[illegible]..... پاسخنامه تشریحی تکلیف شماره ...1... کلاس دهم A

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$y = x^2 + 6x + 5$ (عرض از مبدا)

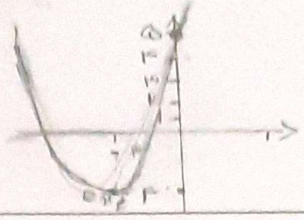
$\Delta = b^2 - 4ac$

$36 - 20 = 16$

$ext \left| \begin{array}{l} \frac{-b}{2a} \\ \frac{-\Delta}{4a} \end{array} \right.$

الف) $min \left| \begin{array}{l} \frac{-6}{2} = -3 \\ \frac{-16}{4} = -4 \end{array} \right.$

ب) $min \left| \begin{array}{l} -3 \\ -4 \end{array} \right.$



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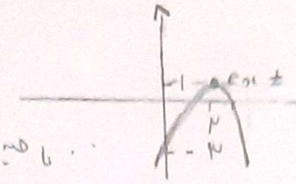
$y = -x^2 + 4x - 3$ (عرض از مبدا)

الف) $\rightarrow Max \left| \begin{array}{l} \frac{-4}{-2} = 2 \\ 1 \end{array} \right.$



... ناحیه اول، دوم و چهارم

ب) (روش) $x^2 + 4x + 3 = (x+3)(x+1) = 0 \rightarrow x = -3 \,,\, x = -1$

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$2x^2 - 3x + a = 0$

الف) $a \leftarrow \Delta > 0 \leftarrow b^2 - 4ac$

$9 - 8a > 0 \rightarrow a < \frac{9}{8}$

ب) $a \leftarrow \Delta = 0 \leftarrow \frac{9}{8} = a$

ج) $a \leftarrow \Delta < 0 \leftarrow \frac{9}{8} < a$

د) $a \leftarrow \Delta > 0 \,/\, \Delta = 0 \leftarrow \Delta \geq 0 \leftarrow 9 - 8a \geq 0 \rightarrow a \leq \frac{9}{8}$

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الف) $x^2 - 2x - 1 = 0 \rightarrow x^2 - 2x - 1 + 1 - 1 \rightarrow (x-1)^2 - 2 = 0$

$(x-1)^2 = 2 \rightarrow x - 1 = \pm\sqrt{2}$

$x - 1 = +\sqrt{2} \rightarrow x = \sqrt{2} + 1$

$x - 1 = -\sqrt{2} \rightarrow x = -\sqrt{2} + 1$

ب) $x^2 - x - 1 = 0$

$x^2 - x - 1 - \frac{1}{4} + \frac{1}{4} = (x - \frac{1}{2})^2 - \frac{5}{4} = 0 \rightarrow x = \frac{\sqrt{5}}{2} + \frac{1}{2}$

$x = \frac{-\sqrt{5}}{2} + \frac{1}{2}$

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الف) $x^2 - 2x - 1 = 0$

$\Delta = b^2 - 4ac \rightarrow 4 + 4 = 8 \,/\, x = \frac{-b \pm \sqrt{\Delta}}{2a}$

$\frac{2 + 2\sqrt{2}}{2} = 1 + \sqrt{2}$

$\frac{2 - 2\sqrt{2}}{2} = 1 - \sqrt{2}$

ب) $x^2 + x - 4 = 0$

$1 + 16 = 17$

$x = \frac{-1 + \sqrt{17}}{2}$

$x = \frac{-1 - \sqrt{17}}{2}$

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۲ الف)
$x^2 - 11x + 28 = 0$
$(x-7)(x-4) \rightarrow x=4 \ / \ x=7$

ب)
$x^2 + 3x - 28 = 0$
$(x+7)(x-4) \rightarrow x=4 \ / \ x=-7$

۷ الف)
$5x^2 - 12x + 7 = 0 \rightarrow x^2 - 12x + 35 = 0 \rightarrow$
$(x-7)(x-5)=0 \rightarrow x=\frac{7}{5} \ / \ x=\frac{5}{5}=1$

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

الف)
$2x^2 - 5x + 3 = 0 \xrightarrow{\text{روش زوج زوجی}} x^2 - 5x + 6 = 0 \rightarrow (x-3)(x-2)=0$
$x=\frac{3}{2} \ / \ x=\frac{2}{2}=1$

ب)
$2x^2 + 5x + 3 = 0 \xrightarrow{\text{روش زوج زوجی}} x^2 + 5x + 6 = 0 \rightarrow (x+3)(x+2)=0$
$x=\frac{-3}{2} \ / \ x=\frac{-2}{2}=-1$

ج)
$2x^2 - 5x + 1 = 0 \rightarrow \Delta = 25 - 8 = 17 \rightarrow x \nearrow \frac{5-\sqrt{17}}{4}$, $\searrow \frac{5+\sqrt{17}}{4}$

د) $4x^2 + 7x + 9 = 0 \rightarrow \Delta = 49 - 144 \quad \Delta < 0 \rightarrow$ ریشه ندارد

$x^2 - 3x - 2 = 0$ $\quad S = \frac{-b}{a}$ $\quad P = \frac{c}{a}$ $\quad S = 3 = \frac{+3}{1}$

$S^2 - 4P = (+3)^2 - (-4) = 9 + 4 = 13$

$S^3 - 3SP = (-3)^3 - 18 = -27 - 18 = -45$

الف)
$\binom{7}{5} + \binom{9}{2} = 21 + 36 = 57$

$\frac{7!}{5!(2!)} = \frac{6 \times 7}{2} = 21$

$\frac{9!}{2! \times 7!} = \frac{8 \times 9}{2} = 36$

ب)
$\binom{9}{3} - \binom{8}{2} = 84 - 28 = 56$

$\frac{9!}{3! \times 6!} = \frac{7 \times 8 \times 9}{6 \times 3} = 84$

$\frac{8!}{2! \times 6!} = \frac{7 \times 8}{2} = 28$