نام و نام خانوادگی ..[illegible]... پاسخنامه تشریحی تکلیف شماره ..۱.... کلاس ..دهم تجربی..

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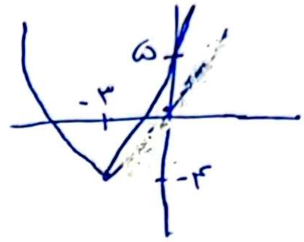
$y = x^2 + 6x + 5$

مشت بس (?) min: $-\frac{b}{2a} = \frac{-6}{2} = -3$, -4

$y = 9 + (-18) + 5 = -4$



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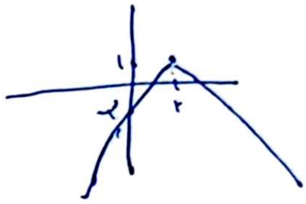
$y = -x^2 + 4x - 3$

max: $-\frac{b}{2a} = \frac{-4}{-2} = 2$, 1

$y = -4 + 8 - 3 = 1$



قطع کردن محور طول ها $= 0 = -x^2 + 4x - 3 \Rightarrow 3 = -x^2 + 4x \Rightarrow x = 1$

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

الف) $\Delta > 0$: $b^2 - 4ac > 0 \Rightarrow 9 - 8a > 0 \Rightarrow$ [illegible] $a = (-\infty, \frac{9}{8})$

ب) $\Delta = 0$: $b^2 - 4ac = 0 \Rightarrow 9 - 8a = 0 \Rightarrow a = \frac{9}{8}$

ج) $\Delta < 0$: $b^2 - 4ac < 0 \Rightarrow 9 - 8a < 0 \Rightarrow a = (\frac{9}{8}, +\infty)$

د) $\Delta \geq 0$: $b^2 - 4ac \geq 0 \Rightarrow 9 - 8a \geq 0 \Rightarrow a = (-\infty, \frac{9}{8}]$

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الف) $x^2 - 2x - 1 = 0 \Rightarrow x^2 - 2x + 1 = 2 \Rightarrow (x-1)^2 = 2 \Rightarrow x - 1 = \pm\sqrt{2} \Rightarrow x = 1 \pm \sqrt{2}$

ب) $x^2 - x - 1 = 0 \Rightarrow x^2 - 2x + 1 = -x + 2 \Rightarrow$ ~~$(x-1)^2 = -x + 2$~~

$\Rightarrow x^2 = x + 1$

$x^2 + 2x + 1 = 3x + 2 \Rightarrow x^2 - 1 = x \Rightarrow (x+1)(x-1) = x$

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

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الف) $x^2 - 2x - 1 = 0$, $\Delta = 4 - (-4) = 8$, $x = \frac{2 \pm \sqrt{8}}{2} = \frac{2 \pm 2\sqrt{2}}{2} = 1 \pm \sqrt{2}$

ب) $x^2 + x - 4 = 0$, $\Delta = 1 - (-16) = 17$, $x = \frac{-1 \pm \sqrt{17}}{2} = -\frac{1}{2} + \frac{1}{2}\sqrt{17}$ یا $-\frac{1}{2} - \frac{1}{2}\sqrt{17}$

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الف) $m^2 - 11m + 24 = 0 \quad (m-8)(m-3) = 0 \Rightarrow m = 8 \text{ یا } 3$

ب) $m^2 + 3m - 28 = 0 \quad (m+7)(m-4) = 0 \Rightarrow m = -7 \text{ یا } 4$

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الف) $5m^2 - 12m + 7 = 0 \Rightarrow m^2 - 12m + 35 = 0 \Rightarrow (m-7)(m-5) = 0 \Rightarrow m = 7 \text{ یا } 5$

ب) $3m^2 - 10m + 7 = 0 \Rightarrow m^2 - 100m + 2401 = 0 \Rightarrow (m-3)(m-7) = 0 \Rightarrow m = 3 \text{ یا } 7$

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الف) $2m^2 - 5m + 3 = 0 \quad a+b+c = 0 \Rightarrow m = 1$

ب) $2m^2 + 5m + 3 = 0 \quad a+c = b \Rightarrow m = -1$

ج) $2m^2 - 5m + 1 = 0 \quad \Delta = 25 - 8 = 17 \quad m = \frac{5 \pm \sqrt{17}}{4}$

د) $4m^2 + 7m + 9 \quad \Delta = 49 - 144 = -95$ جواب حقیقی ندارد

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$m^2 - 3m - 2 = 0 \quad \rho = \frac{c}{a} = -2 \quad \zeta = -\frac{b}{a} = 3$

الف) $\zeta^2 - 2\rho = 9 + 4 = 13$

ب) $\zeta^3 - 3\zeta\rho = 27 - (-18) = 45$

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الف) $\binom{5}{2}\binom{9}{1} + \binom{5}{3}\binom{9}{0} = \frac{5!}{2!3!} \times 9 + \frac{5!}{3!2!} = 90 + 10 = 100$

ب) $\binom{9}{3}\binom{1}{2} = \frac{9!}{3!6!} - \frac{8!}{2!6!} = 84 - 28 = 56$