نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره 14 ..... کلاس دهم 3 .....

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الف) $\min \begin{cases} 1 \to \frac{-b}{2a} \\ -1 \to \frac{-5}{9a} \end{cases}$ ✓

ب) $\max \begin{cases} \frac{-3}{-4} = \frac{3}{4} \\ \frac{31}{-8} = -\frac{31}{8} \end{cases}$ ✓

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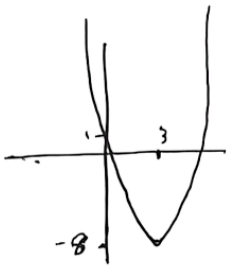
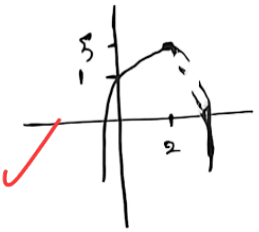
الف)

$\min \begin{cases} 3 \\ -8 \end{cases}$



ب)

$\max \begin{cases} 2 \\ 5 \end{cases}$



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$\alpha\beta = -2$
$\alpha + \beta = 1$
$\Rightarrow \beta = 2 , \alpha = -1 \Rightarrow 4a^3 + Ka^2 - 9a - 2 = 0$

$\alpha = \frac{-2}{\beta}$

$\Rightarrow \frac{-2+\beta^3}{\beta} = 1 \xrightarrow{\times \beta} \beta^3 - \beta - 2 = 0$

① $\Rightarrow 32 + 4K - 9 - 2 = 0 \Rightarrow K = -3$ ✓

② $\Rightarrow -4 + K + 9 - 2 = 0 \Rightarrow K = -3$ ✓

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$\sqrt{\alpha} - \sqrt{\beta} = 1 \Rightarrow \alpha + \beta - 2\sqrt{\alpha\beta} = 1 \Rightarrow 3m - 2\sqrt{m} - 1 = 0$

$t = \sqrt{m}$

$t = -\frac{1}{3}$ ✗

$t = 1$ ✓

$\sqrt{m} = 1 \Rightarrow m = 1$

$\Delta = 16$

$t = \frac{+2 \pm 4}{6} \begin{cases} 1 \\ -\frac{1}{3} \end{cases}$

$\hookrightarrow P_2 = \frac{c}{a} = \frac{-m}{2} = -\frac{1}{2}$ ✓

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عرض از مبدأ تابع = اندازه مثلث ، $\frac{\sqrt{\Delta}}{|a|}$ = اختلاف ریشه‌ها = قاعده مثلث

قاعده مثلث $= \frac{\sqrt{(m+2)^2 - 8m}}{2} = \frac{\sqrt{m^2 + 4m + 4 - 8m}}{2} = \frac{\sqrt{m^2 - 4m + 4}}{2} = \frac{|m-2|}{2}$

$S_\Delta = \frac{1}{2} \times \frac{|m-2|}{2} \times |m| = \frac{3}{4} \rightarrow |m(m-2)| = 3 \rightarrow m(m-2) = 3 \rightarrow m^2 - 2m - 3 = 0 \rightarrow \begin{cases} m = -1 \\ m = 3 \end{cases}$

$\hookrightarrow m(m-2) = -3 \rightarrow m^2 - 2m + 3 = 0 \rightarrow \Delta < 0$

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$y = x^2 + x + 1 \rightarrow x_S = \frac{-b}{2a} = \frac{-1}{2}$

$y = x^2 - 3x + 1 \rightarrow x_S = \frac{-b}{2a} = \frac{3}{2}$

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$y_{min} = \frac{7}{8} \Rightarrow \frac{-\Delta}{4a} = \frac{7}{8}$ (1,0)

$\frac{9-4a^2}{4a} = \frac{-7}{8} \Rightarrow -8a^2 + 7a - 18 = 0$

$\Delta < 0$ ⇒ نمودار

a و c ← مختلف العلامت ← Δ بنابراین از صفر ← معادله دو ریشه مختلف العلامت دارد ← $a > 0$ ← مقدار مثبت a قابل قبول است ← کمترین مقدار صحیح ← $\frac{7}{8}$

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$\left.\begin{array}{l} \alpha+\beta = a+1 \\ \alpha\beta = a \\ \beta = \alpha+2 \end{array}\right\} \Rightarrow a = 2\alpha+1 \Rightarrow \alpha\beta = 2\alpha+1 \Rightarrow \alpha = \frac{1}{\beta-2} \rightarrow \begin{array}{l} \alpha = 1 \\ \beta = 3 \end{array}$

$a = 3$

ریشه‌های صحیح

$6\xi = b \rightarrow b = 24$

$6+\xi = 10 \rightsquigarrow 6 = 4,\ \xi = 6$ (غ ق)

$6\xi - \alpha\beta = 24 - 3 = 21$ ✓ (۲)

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$\text{ext.} \left|\begin{array}{l} \frac{-a}{2a} = \frac{1}{2} \\ \frac{-a^2-8a}{4a} = \frac{-a-8}{4} \end{array}\right. \Rightarrow \frac{-a-8}{4} = \frac{b}{2} \cdot \frac{b}{2} - 1 \Rightarrow \begin{array}{l} a = -4 \\ b = 2 \end{array} \Rightarrow ab - a = 6$ (۱)

$y = -ax^2 + ax + 2 \rightarrow S\left(\frac{1}{4}, \frac{a^2+8a}{8a}\right)$

$y = 2bx^2 - bx - 1 \rightarrow S\left(\frac{1}{4}, \frac{b^2+8b}{-8b}\right)$

$\rightarrow 2b\left(\frac{1}{4}\right) - b\left(\frac{1}{4}\right) - 1 = \frac{a}{8} + 2 \rightarrow \frac{a}{8} = -2$

$a = -16$

$-\frac{a}{16} + \frac{a}{8} + 2 = \frac{-b}{8} - 1 \rightarrow \frac{16}{16} = \frac{-b}{8} \rightarrow b = -8$

$b - a = -8 - (-16) = 8$

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$\alpha\beta = \frac{\beta}{25\alpha} \Rightarrow 25\alpha^2 = 1 \Rightarrow \alpha^2 = \frac{1}{25} \Rightarrow \alpha = 1/5$ (-/5)

$S = \alpha+\beta = \frac{-4}{10\alpha}$, $P = \alpha\beta = \frac{\beta}{10\alpha} \rightarrow \alpha^2 = \frac{1}{10} \rightarrow \alpha = \pm\frac{1}{5}$

$1/5 + \beta = -4/5 \Rightarrow \beta = -1$

$\alpha \rightarrow \begin{cases} \frac{1}{5} \rightarrow \frac{1}{5}+\beta = \frac{-4}{5} \rightarrow \beta = -1 \rightarrow \beta < \alpha & \times \\ -\frac{1}{5} \rightarrow -\frac{1}{5}+\beta = \frac{4}{5} \rightarrow \beta = 1 \rightarrow \beta > \alpha & \checkmark \end{cases} \rightarrow \begin{cases} \alpha = -\frac{1}{5} \\ \beta = 1 \end{cases}$

ضرایب اعداد صحیح ⇒ $y = 5x^2 + 4x - 1$

$\Delta > 0$

$y = -5x^2 + 2x + 1 \rightarrow \begin{cases} x_S = \frac{2}{10} = \frac{1}{5} \\ y_S = -5\left(\frac{1}{5}\right)^2 + 2\left(\frac{1}{5}\right) + 1 = \frac{6}{5} \end{cases}$ → ناحیه اول

$\max \left|\begin{array}{l} \frac{-b}{2a} = \frac{-4}{10} \rightsquigarrow \ominus \\ \frac{-\Delta}{4a} = \frac{-\Delta}{20} \rightsquigarrow \ominus \end{array}\right.$ } غ ق

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$\frac{c}{a} = a+b+1 \Rightarrow ab = a+b-1$ (۱)

$\frac{-b}{a} = a^2+b^2-12 \Rightarrow a+b = a+b-2(a+b-1)-12$

$\Rightarrow 2(a+b)-1 = -12 \Rightarrow a+b-1 = -6$

$\Rightarrow a+b = -5$

$\rightarrow \begin{cases} a^2+b^2-12 = \frac{-b}{a} \rightarrow S^2-2P-12 = S & (I) \\ a+b-1 = ab \rightarrow S-1 = P & (II) \end{cases}$

$\rightarrow S^2-2(S-1)-12 = S \rightarrow S^2-3S-10 = 0 \rightarrow (S-5)(S+2) = 0 \rightarrow \begin{cases} S = -2 & \times \\ S = 5 & \checkmark \end{cases}$