نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ..... کلاس .....

19,5

۱ (۲)

$-\frac{b}{2a} = 2 \Rightarrow \frac{-1}{2a-2} = 2 \Rightarrow 4a = 2 \Rightarrow a = \frac{2}{4} \Rightarrow -\frac{1}{4}x^2 + x + 2$

$x^2 - 4x - 12 \Rightarrow (x-6)(x+2)$

6 ✓ -2 غ ق ق

۲ (۲)

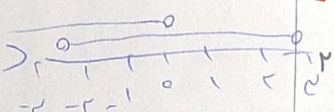
$\Delta > 0 \Rightarrow \Delta = 20 - (4)(m^2) \Rightarrow 20 - 4m^2 > 0 \Rightarrow 20 > 4m^2 \Rightarrow$

$m < 0$

$\frac{20}{4} > m^2 \Rightarrow \frac{\sqrt{20}}{2} > m$

$m > -\frac{\sqrt{20}}{2}$

$m < 0$

$\Rightarrow$ 

$I \cap II : (-\frac{\sqrt{20}}{2}, 0)$ ✓

۳ (۲)

$x^2 - Sx + P \Rightarrow x^2 - 2x + \frac{4}{9} \rightarrow 9x^2 - 18x + 4$ ✓

$S = \frac{2 - \sqrt{5} + 2 + \sqrt{5}}{2} = 2$

$P = \frac{(2-\sqrt{5})(2+\sqrt{5})}{9} = \frac{a-b}{a} = \frac{4}{a}$

$a = 9$

۴ (۲)

$2\alpha^2 + 2\beta^2 + \alpha^2 - \beta^2 = 12 \Rightarrow 2(\alpha^2 + \beta^2) + (\alpha - \beta)(\alpha + \beta) = 12$

$|\alpha - \beta| = \frac{\sqrt{\Delta}}{|a|} = \sqrt{(4)(2m+4)} = \sqrt{8m - 16} = \sqrt{32 - 8m}$

$S^2 - 2P = 14 - m - 2 = 12 - m$ $\quad 28 - 2m + 2\sqrt{32 - 8m} = 12 \Rightarrow 2\sqrt{32 - 8m} = -16 + 2m \Rightarrow$

$\sqrt{32 - 8m} = m - 8 \Rightarrow 32 - 8m = m^2 - 16m + 64 \Rightarrow m^2 - 8m + 16 = 0 \Rightarrow (m-4)^2$

$m = 4$ ✓

۵ (۲)

$ax^2 + bx + 5 = 0 \quad -x^2 + 4x + 5 = 0$

$2 = x_S = \frac{-b}{2a} = 2 \Rightarrow 4a = -b \Rightarrow b = -4a \Rightarrow ax^2 - 4ax + 5$

$x = 2 \Rightarrow 4a - 8a + 5 = 9 \Rightarrow a = -1$

$x^2 + 4x - 5 = 0 \Rightarrow (x+5)(x-1) \rightarrow x_1 = -5, x_2 = 1$

$-5 < x < 1 \Rightarrow x \in (-1, 0)$ ✓

۶ (۲)

$\frac{9\beta}{\alpha} = \alpha^2 \cdot \beta \Rightarrow 9 = \alpha^2 \Rightarrow \alpha = \pm 3$

$\frac{1}{\alpha}+\frac{1}{\beta} = \frac{1}{-3} + \frac{3}{2} = \frac{-2+9}{6} = \boxed{\frac{7}{6}}$ ✓

$\alpha \to 3 \Rightarrow \frac{7}{3} = 3+\beta \Rightarrow \beta < 0$ غ ق ق

$\alpha \to -3 \Rightarrow -\frac{7}{3} = -3+\beta \Rightarrow -\frac{7}{3}+\frac{9}{3} = \beta \Rightarrow \beta = \frac{2}{3}$

$\frac{7}{\alpha} = \alpha+\beta$

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۷ (۲)

$m\beta = -\beta^2 + 2m$

$m \to -4 = x^2 - 4x + 8 \Rightarrow \Delta < 0$ غ ق ق

$m \to +2 = S \Rightarrow x^2 + 2x - 4 \Rightarrow \boxed{S = -2}$ ✓

$\alpha^2 + \beta^2 - 2m = 8 \Rightarrow \alpha^2 + \beta^2 = 8 + 2m$

$S = -m \qquad \alpha^2 + \beta^2 = S^2 - 2P \Rightarrow m^2 + 4m = 8 + 2m \Rightarrow m^2 + 2m - 8 = 0$

$(m+4)(m-2) \to -4 , 2$

$P = -2m$

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۸ (۲)

$\frac{-\Delta}{4a} = \frac{16-(4)(m)(\frac{m+16}{2})}{} \Rightarrow \frac{-16+2m^2+32m}{4m} = 8 \Rightarrow 32m = 28m + 2m^2 - 16$

$2m^2 - 4m - 16 = 0 \Rightarrow m^2 - 4m - 32 = 0 \to (m-8)(m+4)$

۸ غ ق ق (تابع دارای max است) ، -4 ✓

$-2x^2 + 12x + 6 = 0$

$x^2 + 4x - 12 \Rightarrow (x+6)(x-2)$

$\frac{-6}{-2} = \boxed{3} \qquad \frac{\pm 12}{-4} = -$

$\boxed{3 = k}$ ✓

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۹ (۲)

$x_S = 2 \Rightarrow \frac{-b}{2a} = 2 \Rightarrow 4a = -b \Rightarrow b = -4a \Rightarrow ax^2 - 4ax + 4$

$4a - 8a + 4 = 6 \Rightarrow -4a = 2 \Rightarrow a = -\frac{1}{2} \Rightarrow -\frac{1}{2}x^2 + 2x + 4$

$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha+\beta}{\alpha \cdot \beta} \Rightarrow \frac{S}{P} = \frac{4}{-8} = \boxed{-\frac{1}{2}}$ ✓

$S = \frac{-2}{-\frac{1}{2}} = 4 \qquad P = \frac{4}{-\frac{1}{2}} = -8$

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۱۰ (۱٫۵)

$4 - 8a - 8 + 3a^2 + 6a + 3 = 0 \Rightarrow 3a^2 - 2a - 1 = 0 \Rightarrow a^2 - 2a - 3 = 0$

$(a-3)(a+1) = 0 \qquad 3x^2 + 8 + 4 \to \Delta = 4 \Rightarrow x_1, x_2 =$ ~~-2 غ ق ق~~

$\frac{b}{3} \qquad -\frac{1}{3}$

$a = -\frac{1}{3} \to 3x^2 - 8x + 4 = 0 \begin{cases} x = 2 \\ x = \frac{2}{3} \end{cases}$

$\to x^2 - 8x + 12 \Rightarrow \Delta = 4 \Rightarrow \frac{-b \pm 4}{2} = 2 , \boxed{6}$ ✓