نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ...۱۳... کلاس .....

۱

$-\frac{b}{2a}=2 \quad -b=4a \quad a=-1 \quad b=\frac{3}{2} \quad y=-\frac{1}{2}x^2+x+3 \quad x^2-4x-12=0$

$(x-6)(x+2)=0 \quad \underline{x=6}$

۲

$a<0 \rightarrow m<0$

$\Delta>0 \quad 3-4m^2>0 \quad m^2<\frac{3}{4} \quad m<\frac{\sqrt{3}}{2} \quad m>-\frac{\sqrt{3}}{2}$ } اشتراک $\underline{-\frac{\sqrt{3}}{2}<m<0}$

۳

$-\frac{b}{2a}=\frac{2+\sqrt{\Delta}}{3} \quad \sqrt{\Delta}=\sqrt{9} \quad \Delta=9=b^2-4ac$

$-b=3 \quad b=-3$

$2a=3 \quad a=1.5$

$\left.\begin{array}{l} 9=9-6c \quad 6c=0 \\ c=\frac{0}{3} \end{array}\right\}$

ضرایب صحیح $\xrightarrow{\times 4}$ $a=9 \quad b=-18 \quad c=4 \quad \underline{\Rightarrow y=9x^2-18x+4}$

۴

$x^2-4x\underbrace{\frac{m+2}{3}}_{c}=0 \quad x=\frac{4-\sqrt{16-4c}}{2}=2-\sqrt{4-c} \quad \beta=2+\sqrt{4-c}$

$3(2-\underbrace{\sqrt{4-c}}_{b})^2+(2-\underbrace{\sqrt{4-c}}_{b})^2=4(4+b^2-4b)+(4+b^2+4b)=12$

$4b^2-8b+4=0 \quad b^2-2b+1=0 \quad (b-1)^2=0 \quad b=1=\sqrt{4-c}$

$1=4-c \quad c=3=\frac{m+2}{3} \Rightarrow \underline{m=7}$

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$c=0 \quad -\frac{b}{2a}=2 \quad b=-4a \quad \Rightarrow y=ax^2-4ax+0 \xrightarrow{x=2} 9=4a-8a+0$

$4=-4a \quad a=-1 \quad y=-x^2+4x+0$

$x^2-4x-5<0 \quad (x-5)(x+1)=0 \quad -x^2+4x-5>0$

$\begin{array}{c|ccc} & -1 & & 5 \\ \hline - & 0 & + & 0 \end{array}$

$\underline{-1<x<5}$

۶

$x=\beta \longrightarrow \alpha\beta^2 - 7\beta + 9\beta = 0 \quad \beta(\alpha\beta + 2) = 0 \xrightarrow{\beta \neq 0} \alpha\beta = -2 = P = -\frac{-7}{\alpha}$

$-2\alpha = 7 \quad \alpha = -\frac{7}{2}, \omega \quad \beta = \frac{-2}{\frac{7}{2}} = \frac{4}{7} \quad \frac{1}{\frac{7}{2}} + \frac{1}{\frac{4}{7}} = \frac{2}{7} + \frac{7}{4} = \frac{8+49}{28} = \frac{57}{28}$

۷

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

$m\alpha + m\beta - 2m + 8 = 0 \quad m\underbrace{(\alpha+\beta)}_{S=-m} - 2m + 8 = 0 \quad -m^2 - 2m + 8 = 0$

$m^2 + 2m - 8 = 0 \quad (m+4)(m-2) = 0 \quad m = -4, \; m = 2 \Rightarrow S = -m = -2$

$\downarrow$

$\Delta = 14 - 4 \times 1 \times (-8) = -14 < 0$

۸

$a < 0 \Rightarrow m < 0 \quad x_{max} = -\frac{b}{2a} = -\frac{4}{2m} = -\frac{2}{m} \quad y_{max} = m\left(\frac{4}{m^2}\right) = \frac{8}{m} - \frac{2m}{2} + 7 = 8$

$\frac{4}{m} - \frac{a}{m} + \frac{m}{2} - 1 = 0 \quad \frac{-8 + m^2 - 2m}{2m} = 0 \quad (m-4)(m+2) = 0 \quad m = -2$

$-\frac{4}{m}$

$-2x^2 + 4x + 4 = 0 \quad x^2 - 2x - 4 = 0 \quad (x-4)(x+1) = 0 \quad \underline{k = 4}$

۹

$a < 0 \quad c = 4 \quad -\frac{b}{2a} = 2 \quad b = -4a \Rightarrow y = ax^2 - 4ax + 4 \quad \xrightarrow[y=4]{x=2} 4 = 4a - 8a + 4$

$4a = -2 \quad a = -\frac{1}{2} \quad b = 2 \Rightarrow y = -\frac{1}{2}x^2 + 2x + 4 \quad \frac{1}{\alpha} + \frac{1}{\beta} = \frac{S}{P} \quad S = -\frac{2}{-\frac{1}{2}} = 4$

$P = \frac{4}{-\frac{1}{2}} = -8 \quad \frac{1}{\alpha} + \frac{1}{\beta} = \frac{4}{-8} = -\frac{1}{2}$

۱۰

$x=2 \longrightarrow 4 - 8a - 8 + 2a^2 + 4a - 2 = 2a^2 - 2a - 2 = 0 \xrightarrow{\div 2} a^2 - a - 2 = 0$

$(a-2)(a+1) = 0 \quad a = \frac{2}{2} = 1 \quad a = -\frac{1}{2}$

$\xrightarrow{a=1} x^2 - 8x + (2+4+2) = x^2 - 8x + 12 = 0 \quad (x-6)(x-2) = 0 \quad \boxed{x = 6}$

$\xrightarrow{a=-\frac{1}{2}} x^2 - \left(-\frac{4}{2} + \frac{12}{2}\right) + \left(2 + \frac{2}{9} - 4 + \left(\frac{1}{2}\right) + 2\right) = x^2 - \frac{8}{2}x + \frac{4}{2} = 0$

$\frac{8}{2} \quad \frac{12}{2} \quad -2$

$2x^2 - 8x + 4 = 0 \xrightarrow{\div 2} x^2 - 4x + 2 = 0 \quad (x-6)(x-2) = 0 \quad x = \frac{6}{2} = 2 \quad \boxed{x = \frac{2}{2}}$