شناسایی اشکال طاوو.

Subject: Year: Month: Da

نمره بگیریم

(1) $y = -x^2 + bx + 3$ عرض $y = \frac{-\Delta}{4a} = 7 \rightarrow \frac{-(b^2-4ac)}{-4} = \frac{b^2+12}{4} = 7$

$b^2 + 12 = 28 \qquad b^2 = 16 \qquad b = \pm 4$

(2)

$x^2 = t \qquad \Delta = b^2 - 4ac$

الف) $t^2 - 2t + 3 = 0 \rightsquigarrow \Delta = 4 - 4(3 \times 1) = -8 < 0$ ریشه ندارد

ب) $4 - x^2 = t \qquad t^2 - 2t - 15 = 0 \qquad (t+3)(t-5) = 0 \qquad t = -3, 5$

$t = -3 \rightarrow 4 - x^2 = -3 \rightsquigarrow x^2 = 7 \rightsquigarrow x = \pm\sqrt{7}$

$t = 5 \rightsquigarrow 4 - x^2 = 5 \rightsquigarrow x^2 \neq -1$

(3)

$\alpha + \beta = \frac{-b}{a} \rightarrow \frac{16}{4} = 4$

$\cancel{-\alpha} - \beta = -4$

$\begin{cases} \alpha + \beta = 4 \\ \alpha = 2 + \beta \end{cases}$

$4(1)^2 - 16(1) + m = 0$

$\cancel{4 - 16} + m = 0$ $\quad -12$

$\boxed{m = 12}$

$-\beta = 2 - 4 + \beta$

$-2\beta = -2 \qquad \boxed{\beta = 1}$

$\alpha + \beta = 4$

$\alpha = 4 - 1 \Rightarrow \boxed{\alpha = 3}$

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(4) $2\alpha - \beta = 4 \qquad P = \alpha \cdot \beta = \frac{c}{a} = \frac{m-1}{3} = 0 \qquad m - 1 = 0 \qquad \boxed{m = 1}$

$\beta = -4 + 2\alpha \qquad \alpha + \beta = \frac{-b}{a} = \frac{6}{3} = 2 \qquad \alpha + 2\alpha - 4 = 2$

$3\alpha = 6 \qquad \boxed{\alpha = 2} \qquad \alpha + \beta = 2 \qquad \boxed{\beta = 0}$

(5) همچنین $\frac{m^2 - 2}{-m} = 1 \longrightarrow \frac{c}{a} = 1 \longrightarrow$ ضرب ریشه‌ها $= 1 \rightarrow$ عکس

$m^2 - 2 = -m \qquad m^2 + m - 2 = 0 \xrightarrow[\text{حالت خاص}]{} x = 1, -2 \xrightarrow{\text{شرط}} \Delta > 0$

$m = -2 \rightarrow 2x^2 + 4x + 2 = 0 \rightsquigarrow \Delta = 16 - 4(4) = 0$ غ

$m = 1 \rightarrow -x^2 + 4x - 1 = 0 \longrightarrow \Delta = 16 - 4(1) > 0$ ص

Year: .... Month: .... Day: ....

(۶)

$\alpha\cdot\beta^۲=۴$ $\overbrace{\alpha\cdot\beta}^{۳}\cdot\beta=۴$ ضرب ریشه‌ها $=\frac{c}{a}=۳$

$۳\beta=۴$ $\beta=\frac{۴}{۳}$ $\underset{\frac{۴}{۳}}{\alpha\cdot\beta}=۳\rightsquigarrow\alpha=\frac{\frac{۳}{۱}}{\frac{۴}{۳}}=\frac{۹}{۴}$

جمع ریشه‌ها $=m\rightsquigarrow\frac{۹}{۴}+\frac{۴}{۳}=\frac{۴۳}{۱۲}$

(۷)

$S=\alpha+\beta=\alpha+۳\alpha=۴$ $\boxed{\beta=۳\alpha}$

$۴\alpha=۴$ $\boxed{\alpha=۱}$ $P=\frac{c}{a}$

$\beta=۳(۱)=۳$ $\boxed{P=m=۳}$

$P=۳\times۱$ $\boxed{m=۳}$

(۸)

$\alpha^۳+\frac{۸}{\alpha^۳}=\overbrace{\underbrace{\left(\alpha+\frac{۲}{\alpha}\right)}_{}}^{۷}\left(\alpha^۲-۲+\frac{۴}{\alpha^۲}-۴+۴\right)$

$\left(\underbrace{\alpha+\frac{۲}{\alpha}}_{۷ \to ۴۹}\right)^۲-۴=۴۳$

$\frac{\alpha^۲+۲}{\alpha}=\frac{۷\alpha}{\alpha}=۷$

$\alpha^۲-۷\alpha+۲=0$

$\alpha^۲+۲=۷\alpha$ $\alpha^۲=۷\alpha-۲$ $۴۳\times۷=۳۰۱$

(۹)

$-۱۰t^۲+۵۰t=0$ $t(-۱۰t+۵۰)=0$

$t=0$ یا $\to -۱۰t+۵۰=0\rightsquigarrow-۱۰t=-۵۰$ $\boxed{t=۵}$

$-۱۰t+۵۰=0$

$y=\frac{-\Delta}{۴a}=\frac{-(b^۲-۴ac)}{-۴۰}=۶۲{,}۵$ $(۵۰)^۲$

(۱۰)

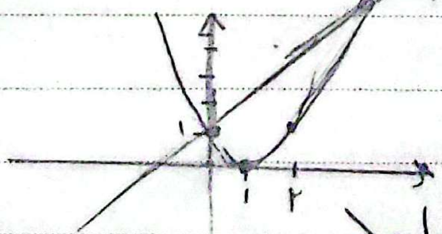
$x=0\rightsquigarrow y=۱$

$x=۲\rightsquigarrow y=۵$

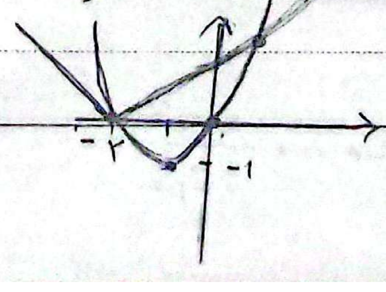
$(x-۱)^۲=۲x+۱$

$x^۲-۲x+۱\rightsquigarrow$

x	۰	۱	۲
y	۱	۰	



$x^۲+۲x=|x+۲|$



ریشه‌ها $x=0,-۲$

$x(۲+x)=0$ $\frac{-b}{۲a}=-۱$

$x=0,-۲$

$y=-۱$