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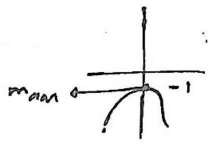
نام و نام خانوادگی ...آیسام پاریک... پاسخنامه تشریحی تکلیف شماره ..۱۹.. کلاس ...یازدهم...

$x_1 = \beta, 3\beta \to P = 3\beta^2 = \frac{4}{3} \Rightarrow \beta^2 = \frac{4}{9} \Rightarrow \beta = \pm\frac{2}{3}$ ، $S = \beta + 3\beta = 4\beta$ $\beta = \frac{2}{3} \Rightarrow S = 4\beta = \frac{8}{3} = \frac{a}{3} \Rightarrow a = 8$ $\beta = \frac{-2}{3} \Rightarrow S = 4\beta = \frac{-8}{3} = \frac{a}{3} \Rightarrow a = -8$ $8-(-8) = \boxed{16}$ ✓	۲	۱
ریشه ها $\alpha, \beta \to P = \alpha\beta = \frac{1}{36} \to \frac{1}{\sqrt{\alpha}} + \frac{1}{\sqrt{\beta}} = 5$ $\Rightarrow \frac{\sqrt{\alpha}+\sqrt{\beta}}{\sqrt{\alpha\beta}} = \frac{\sqrt{\alpha}+\sqrt{\beta}}{\sqrt{\frac{1}{36}}} = 5 \Rightarrow \sqrt{\alpha}+\sqrt{\beta} = \frac{5}{6} \xrightarrow{\text{توان } 2} \alpha+\beta+\overbrace{2\sqrt{\alpha\beta}}^{\frac{2}{6}} = \frac{25}{36}$ $\to \alpha+\beta = \frac{13}{36} \to S = \frac{m+14}{36} = \frac{13}{36} \Rightarrow m = -1$ $\begin{cases} -x^2+3x+2=0 \\ P = \frac{2}{-1} = \boxed{-2} \end{cases}$ ✓	۲	۲
ریشه های معادله صدق می کنند $\to \begin{cases} 4\alpha^3+k\alpha^2-9\alpha-2=0 \\ 4\beta^3+k\beta^2-9\beta-2=0 \end{cases} \xrightarrow{\text{جمع}} 4(\underbrace{\alpha^3+\beta^3}_{S^3-3SP})+k(\underbrace{\alpha^2+\beta^2}_{S^2-2P})-9\underbrace{(\alpha+\beta)}_{S}-4=0$ دقت! $\Rightarrow 4(7)+k(5)-9-4=0 \Rightarrow 28+5k-13=0 \Rightarrow 5k=-15$ $k = \cancel{5}$ $\boxed{-3}$	۲	۳
$S = \alpha+\beta = -6 \to \beta = -6-\alpha$ ، $3\alpha^2+2\beta^2 = \alpha^2+2(\alpha^2+\beta^2) =$ $\alpha^2+2(S^2-2P) = \alpha^2+2(36-2\alpha\beta) \xrightarrow{\beta=-6-\alpha} \alpha^2+72+4\alpha^2+24\alpha = 5\alpha^2+24\alpha+72 = 12\sqrt{2}+85$ $\Rightarrow 5\alpha^2+24\alpha-12\sqrt{2}-13=0 \to \alpha = \frac{-24\pm(26+6\sqrt{2})}{10} \xrightarrow{\alpha<0} \alpha = \frac{-50-6\sqrt{2}}{10}$ $\beta = -6-\left(\frac{-50-6\sqrt{2}}{10}\right) = -1+\frac{3\sqrt{2}}{5}$ $\to P = a \to a = \alpha\beta = \left(\frac{-50-6\sqrt{2}}{10}\right)\left(-1+\frac{3\sqrt{2}}{5}\right) = \cancel{\frac{107-60\sqrt{2}}{25}}$	۱	۴
$x^2 = t \to t^2-7t-5=0 \Rightarrow t = \frac{7\pm\sqrt{69}}{2} \to \begin{cases} x^2 = \frac{7-\sqrt{69}}{2} \ \times \\ x^2 = \frac{7+\sqrt{69}}{2} \ ✓ \end{cases}$ ، $x^2 \geq 0$ $\to x = \pm\sqrt{\frac{7+\sqrt{69}}{2}} \to S = \sqrt{\frac{7+\sqrt{69}}{2}} - \sqrt{\frac{7+\sqrt{69}}{2}} = 0$ $P = \left(\sqrt{\frac{7+\sqrt{69}}{2}}\right)\left(-\sqrt{\frac{7+\sqrt{69}}{2}}\right) = -\frac{(7+\sqrt{69})}{2}$ $\to 2P^2-\underbrace{3SP}_{0}+\underbrace{2S}_{0} \Rightarrow 2P^2 = 2\left(-\frac{7+\sqrt{69}}{2}\right)^2 = 2\left(\frac{118+14\sqrt{69}}{4}\right) = 59+7\sqrt{69}$ ✓	۲	۵

ریشه‌های معادله 1 : $\alpha+0/5 , \beta+0/5 \longrightarrow S: \alpha+\beta+1 = \frac{a}{2} \xrightarrow{\alpha+\beta=-\frac{1}{2}} \frac{1}{2} = \frac{a}{2} \Rightarrow \boxed{a=1}$ ریشه‌های معادله 2 : $\alpha , \beta \longrightarrow S: \alpha+\beta = \frac{-a}{2a} = \frac{-1}{2} , P: \alpha\beta = -3$ P معادله 1 : $(\alpha+0/5)(\beta+0/5) = \alpha\beta + 0/5\alpha + 0/5\beta + 0/25 = \underbrace{\alpha\beta}_{-3} + 0/5\underbrace{(\alpha+\beta)}_{-0/5} + 0/25 = -3$ $\Rightarrow \frac{b}{2} = -3 \Rightarrow \boxed{b=-6}$ $\longrightarrow \left[\frac{(1)(-6)}{4}\right] = \left[\frac{-6}{4}\right] = [-1/5] = -2$	2	6
$S = \alpha+\beta = \frac{a}{a} = 1 \to \alpha+\beta = 1 \longrightarrow \beta = 1-\alpha$ $40\beta^2 + 20\alpha^2 - 20\beta = 17 \xrightarrow{\beta=1-\alpha} 40(1-\alpha)^2 + 20\alpha^2 - 20(1-\alpha) = 17$ $\longrightarrow 60\alpha^2 - 60\alpha + 3 = 0 \to 20\alpha^2 - 20\alpha + 1 = 0 \longrightarrow \alpha = \frac{20 \pm \sqrt{320}}{40} \Rightarrow \alpha = \frac{5 \pm 2\sqrt{5}}{10}$ $\alpha = \frac{5+2\sqrt{5}}{10} \xrightarrow{\beta=1-\alpha} \beta = \frac{5-2\sqrt{5}}{10}$ $\alpha = \frac{5-2\sqrt{5}}{10} \xrightarrow{\beta=1-\alpha} \beta = \frac{5+2\sqrt{5}}{10}$ $\Rightarrow \lvert\alpha-\beta\rvert = \left\lvert\frac{4\sqrt{5}}{10}\right\rvert = \frac{2\sqrt{5}}{5}$	2	
ریشه‌های معادله 1 : $\beta , \beta+2 \Rightarrow \beta+2-\beta = 2 \longrightarrow \frac{\sqrt{\Delta}}{\lvert a\rvert} = 2 \longrightarrow \frac{\sqrt{a^2+1-2a}}{1} = \frac{\sqrt{(a-1)^2}}{1} = \lvert a-1\rvert = 2$ $\longrightarrow a-1 = \pm 2 \to \begin{cases} a=3 ✓ \\ a=-1 ✗ \end{cases} \longrightarrow$ چون دو ریشه طبیعی هستند ضرب آن‌ها مثبت است. پس $a>0$ باشد $\Rightarrow P = \frac{a}{1} = \boxed{3}$ $x^2 - (3a+1)x + b = 0 \xrightarrow{a=3} x^2 - 10x + b = 0 \longrightarrow \frac{\sqrt{\Delta}}{\lvert a\rvert} = 2 \to \sqrt{100-4b} = 2$ $\to 4b = 96 \longrightarrow b = 24 \Rightarrow P = \frac{b}{1} = \boxed{24} \Rightarrow 24-3 = 21$	2	8
$\alpha^2+\beta^2 = S^2 - 2P \quad S = \frac{-b}{a} = \frac{-1}{1} = -1 , P = \frac{c}{a} = \frac{-1-m^2}{1} = -1-m^2$ $\xrightarrow{\min} S^2 - 2P = 1 - 2(\underbrace{-1-m^2}) \longrightarrow 1-2(-1) = 3$ 	2	9
$x_S = \frac{-5+3}{2} = \frac{-2}{2} = -1 , y_S = 1 \Rightarrow y = a(x+1)^2 + 1$ $\Rightarrow y = ax^2 + 2ax + a + 1 \Rightarrow S = \frac{-2a}{a} = -2 , P = \frac{a+1}{a}$ $\alpha^2+\beta^2 = S^2 - 2P = 4 - 2\left(\frac{a+1}{a}\right) = 5 \Rightarrow \frac{-1}{2} = \frac{a+1}{a} \Rightarrow -a = 2a+2 \Rightarrow a = -\frac{2}{3}$ $\Rightarrow y = -\frac{2}{3}x^2 - \frac{4}{3}x + \frac{1}{3} \xrightarrow{x=0}$ عرض از مبدأ $= \frac{1}{3}$	2	10

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$S = -۶ \quad P = a$

$\alpha , \beta = \dfrac{-۶ \mp \sqrt{۳۶-۴a}}{۲} \xrightarrow{\alpha<\beta} \alpha = -۳ - \sqrt{۹-a}$

$\alpha^{۲} + ۲(\alpha^{۲} + \beta^{۲}) = \alpha^{۲} + ۲(S^{۲} - ۲P)$

$(-۳ - \sqrt{۹-a})^{۲} + ۲(۳۶ - ۲a) = ۱۲\sqrt{۲} + ۸۵ \longrightarrow a = ۱$