مارینا ابن الوفا

۷- $x^2+2(a+1)x+2a-1=0$

$\alpha+\beta=-2(a+1)$

$a^2=\alpha\beta \rightarrow a^2=2a-1 \rightarrow a^2-2a+1=0 \rightarrow (a-1)^2=0 \Rightarrow \boxed{a=1}$

$-2-\sqrt{2}, 1, -2+\sqrt{2}$

۸- $x^4-7x^2+12=0 \rightarrow t^2-7t+12=0$

$x^2=t \qquad t^2-5t+p=0 \rightarrow S=7, P=12$

$2p^2-3Sp+3S=2(16)-3(-12)(7)+3(7)=32+108+21=\boxed{149}$

۹- $y=3x^2+4x-9 \rightarrow S\left(\frac{-b}{2a}, \frac{-\Delta}{4a}\right) \qquad \frac{-b}{2a}=\frac{-4}{6}$

$y=-4x-4$ تابع $\frac{-\Delta}{4a}=\frac{-(16-4(-9)(3))}{4(3)}=\frac{16+108}{12}=\frac{4+9(-9)}{-9}$

$\frac{4+9k}{3}=-2\left(\frac{4}{3k}\right)-4 \rightarrow \frac{4+9k}{3}+\frac{8}{3k}=-4$

$\frac{9k+12}{3k}=-4 \rightarrow 9k+12=-12k \rightarrow 21k=-12 \rightarrow k=\frac{-12}{21}=\frac{-4}{7}$

$\frac{20-29}{\frac{-4}{7}}=\frac{-9}{-4}=\boxed{2+\frac{1}{4}}$

۱۰- $y=-mx^2+mx+1 \qquad -mx^2+mx+1=-m-x$

$y=-m-x \qquad mx^2+(-m-1)x-m-1=0$

$\Delta<0 \rightarrow (-m-1)^2-4(m)(-m-1)=m^2+2m+1+4m^2+4m$

$5m^2+6m+1<0$

$m<-1 \quad m>\frac{-1}{5} \qquad \boxed{-1<m<\frac{-1}{5}}$

دهم رضتر B

سری ۲۳

page: ( )

مارینا امین الرعایا

Subject:

Year: Month: Day:

۱_ $x^2-5x+2=0$ $\qquad \frac{4\alpha+\beta^5}{5\beta^2}$ $\qquad \beta^2-5\beta+2=0$ $\qquad \beta^5=479\beta-210$

$\alpha+\beta=5 \rightarrow \alpha=5-\beta$ $\qquad \beta^2=5\beta-2 \Rightarrow (\beta^2)^2$

$\alpha.\beta=2$

$4\alpha+\beta^5=4\alpha+479\beta-210 \rightarrow 4(5-\beta)+479\beta-210=20-4\beta+479\beta-210=475\beta-190$

$\frac{4\alpha+\beta^5}{5\beta^2}=\frac{475\beta-190}{5\beta^2}=\frac{475\beta}{5\beta^2}-\frac{190}{5\beta^2}=\boxed{\frac{95}{\beta}-\frac{38}{\beta^2}}$ β حسب

۲_ $\frac{3-1/5}{2}=\frac{1/5}{2}=\frac{\frac{15}{10}}{\frac{2}{1}}=\frac{15}{20}=\frac{3}{4}$

$x_s=\frac{3}{4}$

$\frac{-b}{2a}=\frac{3}{4}$ $\xrightarrow{\text{جمع ریشه‌ها}}$ $\frac{-b}{a}=\boxed{\frac{3}{2}}$

۴_ $\alpha^2+\beta^2=5$ $\qquad y=(x-\alpha)(x-\beta)=x^2-\overbrace{(\alpha+\beta)}^{p}x+\overbrace{\alpha\beta}^{q}$

$\alpha^2+\beta^2=(\alpha+\beta)^2-2\alpha\beta \rightarrow 5=(\alpha+\beta)^2-2\alpha\beta$

x	y
-5	y
3	y

هم عرض $\Rightarrow f(3)=f(-5)$ $\qquad 3^2+3p+q=25-5p+q \rightarrow 9+3p=25-5p$

$8p=16 \rightarrow p=2$

$5=(-2)^2-2\alpha\beta \rightarrow \alpha.\beta=\frac{-1}{2}$

$\alpha+\beta=-2$ ✓

y محل برخورد با محور $\Rightarrow x=0$ $\qquad y=q=\alpha.\beta=\boxed{\frac{-1}{2}} \Rightarrow \boxed{(0,\frac{-1}{2})}$

۳_ $x^2+2kx+5=0 \rightarrow |\alpha-\beta|=\frac{\sqrt{\Delta}}{|a|}=\frac{\sqrt{4k^2-20}}{1}=\sqrt{4k^2-20}$ تفاضل ریشه‌ها

$\sqrt{4k^2-20}=\frac{4}{3}k$

$\Rightarrow 4k^2-20=\frac{16}{9}k^2 \rightarrow 4k^2-\frac{16}{9}k^2=20$ $\qquad \frac{9}{2}=4/5$

$\frac{20}{9}k^2=20 \rightarrow k^2=9$ $\qquad \left[\frac{k^2}{2}\right]=\left[\frac{9}{2}\right]=④$ براکت

۵_ $-x^2+5x+m=0 \rightarrow x^2-5x-m=0$ (min) $\rightarrow (\frac{9}{2})^2-5(\frac{9}{2})+m>0$

$\alpha.\beta=5$ میانگین ریشه‌ها $=\frac{5}{2} \rightarrow \frac{5}{2}<\frac{9}{2}$ ✓ $\qquad \frac{81}{4}-\frac{45}{2}+m>0$

$\Delta=25-4m>0 \rightarrow m<\frac{25}{4}$ $\qquad m>\frac{9}{4}$

$\frac{9}{4}<m<\frac{25}{4} \Rightarrow m=3,④,5,6$ جواب

۶_ $y_s=2$ $\qquad y=mx^2-12x+5m-1 \rightarrow m(\frac{6}{m})^2-12(\frac{6}{m})+5m-1=\frac{36}{m}-\frac{72}{m}+5m-1$

طول رأس $x_s=\frac{-b}{2a}=\frac{+12}{2m}=\frac{6}{m}$ $\qquad =\frac{-36}{m}+5m-1=2$ ✓

$\frac{-36}{m}+5m-1=2 \rightarrow \frac{-36}{m}+5m=3 \rightarrow -36+5m^2-3m=0$

$\Delta=9+720=729$ $\qquad m=\frac{3\pm27}{10} \rightarrow m=3,\ m=\frac{-12}{5}$

$a=m>0 \Rightarrow m=3$

$x_s=\frac{6}{m}=\frac{6}{3}=②$

Arman