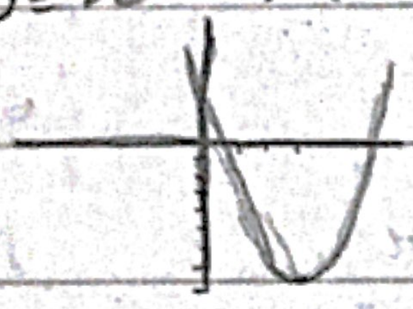
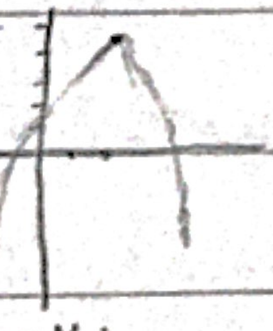
۱- $a>0$ min $\frac{4}{4}=1$ $2-4+1=-1$ ext $|_{-1}^{1}$

$a<0$ max $\frac{-2}{-4}=0/5$ $-\frac{9}{8}+\frac{9}{4}-5=\frac{9}{8}-\frac{45}{8}=\frac{-31}{8}$ ext $|_{\frac{-31}{8}}^{\frac{3}{4}}$

۲- $y=9x^2-6x+1$ $y=-9x^2+4x+1$





۳- $4x^3+kx^2-9x-2=0 \rightarrow 4(x-a)(x^2-2\beta x+\beta^2)$

$4x^3-(4a+8\beta)x^2+(4\beta^2+8a\beta)x-\underbrace{4a\beta^2}_{-2}$

$4\beta=-1$ $8\beta=-2$ $\beta=-\frac{1}{4}$ $a+\beta=1$ $a-\frac{1}{4}=1$ $a=\frac{5}{4}$

$-4a-8\beta=(\frac{-4\times\frac{5}{4}}{-5})-(\frac{8\times-\frac{1}{4}}{-2})=-3$

۴- $\sqrt{a}-\sqrt{B}=1 \rightarrow \underbrace{a+B}_{3m}-2\underbrace{\sqrt{aB}}_{m}=1$ $3m-2\sqrt{m}-1=0$

$\sqrt{m}<\overset{1}{-\frac{1}{3}}$ غ ق ق $\frac{c}{a}=\frac{-m}{3}=\frac{-(1)^2}{3}=-\frac{1}{3}$ معادله دوم

۵- $2x^2-(m+2)x+m$ $\Delta=m^2-4m+4$

$\frac{3}{4}=\frac{1}{2}\times\frac{|m-2|}{2}\times m=\frac{m^2-2m}{4}$ یا $\frac{2m-m^2}{2}$ چون در نهایت دلتای معادله آن منفی است وجواب ندارد

$\frac{\sqrt{\Delta}}{|a|}$ ✓ ✗

$m^2-2m-3=0 \rightarrow (m-3)(m+1)$

$2x^2+3x+1 \rightarrow \frac{-b}{2a}=-\frac{3}{4}$

$2x^2-3x+1 \rightarrow \frac{-b}{2a}=\frac{3}{4}$

۶- $\frac{-\Delta}{4a}=\frac{7}{8} \rightarrow \frac{4a^2-9}{a}=\frac{7}{2}$ $8a^2-7a-18=0$ دو مقدار

$a<\overset{4}{-\frac{9}{7}}$

۷- $x^2-(a+1)x+a=0 \quad a=1 \quad B=2 \rightarrow (x-1)(x-2)=x^2-3x+2$ $a=2$ یا

$x^2-(2a+1)+b=x^2-10x+b=0 \rightarrow \frac{-b\pm\sqrt{\Delta}}{2} \begin{cases} a+\sqrt{12a-b} \\ a-\sqrt{12a-b} \end{cases}$

$a+\sqrt{12a-b}-a+\sqrt{12a-b}=2\sqrt{12a-b}=2 \rightarrow b=24 \quad 24-3=21$

۸- $y=-ax^2+ax+2 \rightarrow \frac{-b}{2a}=\frac{a}{2a}=\frac{1}{2} \quad \frac{-\Delta}{4a}=\frac{a}{4}+2$

$y=2bx^2-bx-1 \rightarrow \frac{-b}{2a}=\frac{b}{4b}=\frac{1}{4} \quad \frac{-\Delta}{4a}=\frac{-b}{8}-1$

$2b(\frac{1}{4})^2-b(\frac{1}{4})-1=\frac{a}{4}+2 \rightarrow a=-2\times4=-12$

$12(\frac{1}{4})^2-12(\frac{1}{4})+2=\frac{-b}{8}-1 \Rightarrow \frac{2}{4}=\frac{-b}{8} \rightarrow -b=-6 \quad b-a=(-6)-(-12)=6$

۹- $2a\,ax^2+4x+B=0 \quad \frac{B}{2a}=aB \quad a=\pm\frac{1}{2}$

اگر $a=\frac{1}{2} \rightarrow \frac{1}{2}+\frac{4}{2}(-1)=0$

اگر $a=-\frac{1}{2} \rightarrow -\frac{1}{2}-\frac{4}{2}+1=0$ ✗ B یا a

$\frac{-b}{2a}=\frac{4}{10}>0 \quad 2a<0$ سهمی در ربع اول

۱۰- $x^2-(a^2+b^2-12)x+\underbrace{a+b-1}_{a^2+B^2-12}=0$

$a^2+B^2-12=a+B$

$a=1 \quad B=a^2+B^2-12$

$B^2-B-12=0$

$(B-4)(B+3)=0$

$B \begin{cases} 4 \Rightarrow x^2-5x+4 \\ -3 \Rightarrow x^2+x-2 \end{cases}$ ✗

$a+B=1+4=5$