A5 نیمسال تابستانی

۱) الف) $x+2y=-2$, $2\times(2x-y=9)$ $\Rightarrow$ $\begin{cases} x+2y=-2 \\ 4x-2y=18 \end{cases}$

$5x=16$

$x=2$

$y=-1$

$\frac{x}{y}=-2$

ب) $\frac{1}{x}-\frac{1}{y}=-1 \Rightarrow \frac{y-x}{xy}=-1 \Rightarrow (y-x=-xy)\times -5$

$\frac{5}{x}-\frac{7}{y}=-2=\frac{5y-7x}{xy}=-2 \Rightarrow 5y-7x=-2xy$

$-2x=2xy$

$y=-1$

$x=-\frac{1}{2}$ $\quad \frac{x}{y}=\frac{1}{2}$

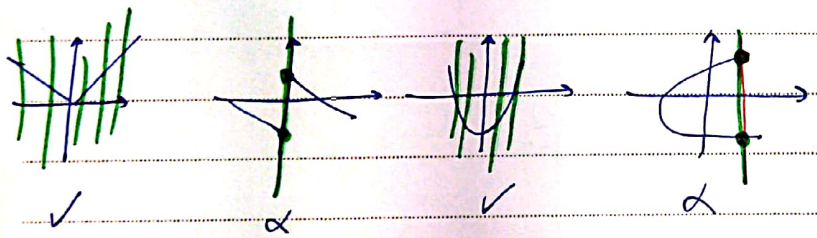
۲) $a+1=-2 \quad a=-3$

$\underbrace{f(a)}_{-4}+\underbrace{2f(2)}_{2b}=2\underbrace{f(1)}_{-2}$ $\quad b=0$

۳) $m^2-2m=-2 \quad m^2-2m+2=0 \quad (m-1)(m-2)=0$

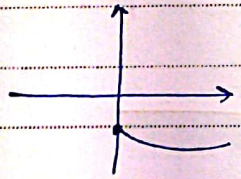
$m=1$ $\quad m=2$ α

۴)



✓ $\quad \alpha \quad$ ✓ $\quad \alpha$

۵) $y=-\sqrt{x+1}$



ب) ✓ $\frac{y}{\sqrt{1-y^2}}$ $\quad 1-y^2\neq 0$ ✗

$1\neq y^2 \quad y\neq \pm 1$

۶) $y^2+2y^2+2y+x^2+x=0$ $\quad$ ✓ ب $\quad |y|=x \xrightarrow{x=1} y=\pm 1$

$0+0+0+0+0=0$

Arman

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(۷ $\frac{x^2+2x+5}{x^2+4x+7} = \frac{(\sqrt{3}-2)^2+4(\sqrt{6}-2)+5}{(\sqrt{3}-2)^2+4(\sqrt{6}-2)+5} = \frac{3+4-4\sqrt{3}+4\sqrt{3}-8+5}{3+4-4\sqrt{3}+4\sqrt{3}-8+7} = \frac{4+2\sqrt{3}}{4+2\sqrt{3}}$

$\frac{2+\sqrt{3}}{3+\sqrt{3}} \times \frac{3-\sqrt{3}}{3-\sqrt{3}} = \frac{(2+\sqrt{3})(3-\sqrt{3})}{6}$

(۸ x^2+ax+b $y=3x+a=0$ $(-1,-2)$

$(-1,-2)$ $-2+3+a=0$

$-1-1+b=-2$ $a=1$

$b=-3$

(۹ $a+b=2a$ $\rightarrow$ $a-2b+1 = b-2b+1 = -b+1 = 2b$

$b=a$ $2b=1$ $b=\frac{1}{2}=a$

(۱۰ $x=1$ $\frac{4-a+c+1}{b+2}=1 \Rightarrow \frac{5-a+c}{2+b}=1$ $5-a+c=2+b$

$3-a+c=b$

$x=2$ $\frac{14-2a+c+1}{2b+2}=2$ $+14-2a+c+1=4b+4$

$-2a+c-4b=-11$

$-4a-4c=-8$

$-2a+c=-1$

$x=-1$ $4+a+c+1=-b-2$ $4+a+c+1=-2+a-c-2$

$2c+5=-5$

$a+b+c=-5-2-1=-8$ $2c=-10$ $c=-5$

$-2a-5=-1$ $2a=-4$

$2+2-5=b$ $a=-2$

$b=-1$