VD 7.2

Solve the following system of equation algebraically

1. $\begin{cases} \dfrac{x+y}{2}-y=-\dfrac{1}{2} \\ x-y+\dfrac{3x-1}{2}=-\dfrac{3}{4} \end{cases}$	$\left(\dfrac{1}{2},\dfrac{3}{2}\right)$
2. $\begin{cases} \dfrac{1}{x}+\dfrac{2}{y}=4 \\ \dfrac{3}{y}+\dfrac{2}{x}=3 \end{cases}$	$\left(-\dfrac{1}{6},\dfrac{1}{5}\right)$
3. $\begin{cases} e^x+2e^y=2 \\ 2e^x-e^y=\dfrac{1}{2} \end{cases}$	$\left(\ln\dfrac{3}{5},\ln\dfrac{7}{10}\right)$
4. $\begin{cases} xy=e^4 \\ \dfrac{x^3}{y^2}=e^5 \end{cases}$	$\left(e^{\frac{13}{5}},e^{\frac{7}{5}}\right)$
5. $\begin{cases} \sqrt{x+1}+2\sqrt{y+2}=4 \\ 3\sqrt{x+1}-7\sqrt{y+2}=-\dfrac{15}{2} \end{cases}$	$\left(0,\dfrac{1}{4}\right)$
6. $\begin{cases} \dfrac{2x+1}{x+1}+\dfrac{2y-1}{y-2}=\dfrac{3}{2} \\ \dfrac{3}{x+1}+\dfrac{y}{y-2}=3 \end{cases}$	$(0,0)$
7. $x+y\in[0,\dfrac{\pi}{2})$ and $x-y\in[0,\dfrac{\pi}{2})$ $\begin{cases} \sin(x+y)-\cos(x-y)=\dfrac{1}{3} \\ 2\sin(x+y)+7\cos(x-y)=\dfrac{11}{3} \end{cases}$	$\left(\dfrac{1}{2}\left(\cos^{-1}\dfrac{1}{3}+\sin^{-1}\dfrac{2}{3}\right),\dfrac{1}{2}\left(\sin^{-1}\dfrac{2}{3}-\cos^{-1}\dfrac{1}{3}\right)\right)$