HW7

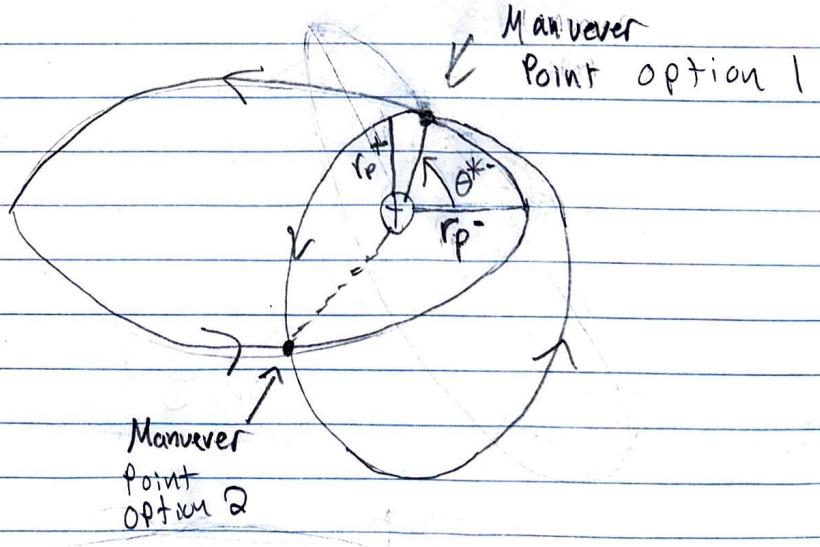
1a)

$$r = r_N = \frac{p}{1+e\cos(\theta^*)} = \frac{p_N}{1+e_N\cos(\theta^*_N)}$$

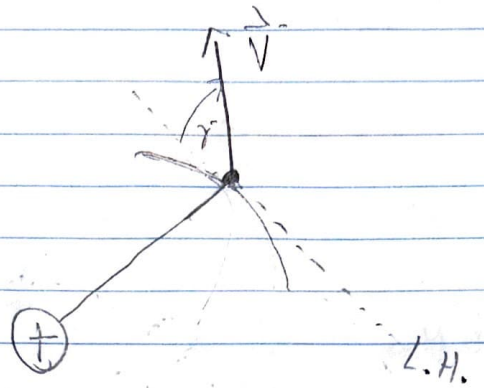
$$\Delta w = \theta^* - \theta^*_N$$

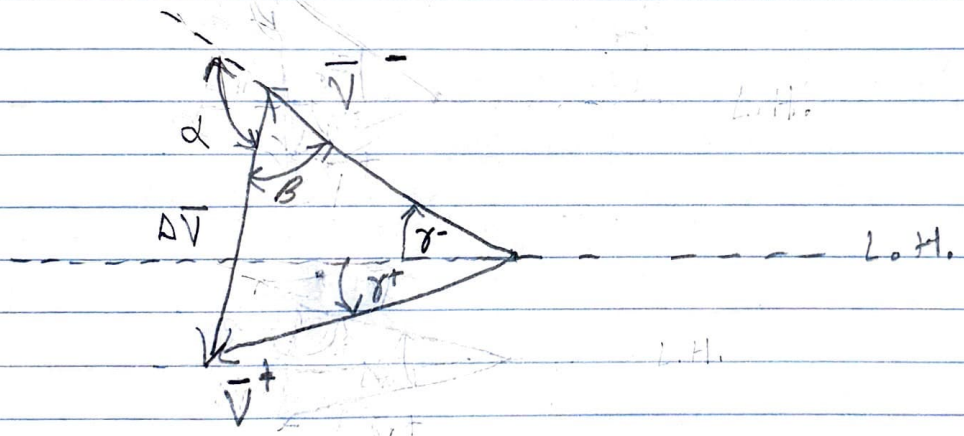
$$\frac{p}{1+e\cos(\theta^*)} - \frac{p_N}{1+e_N\cos(\theta^*_N)} = 0$$

$$\theta^* - \theta^*_N - \Delta w = 0$$

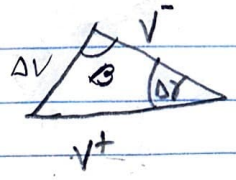


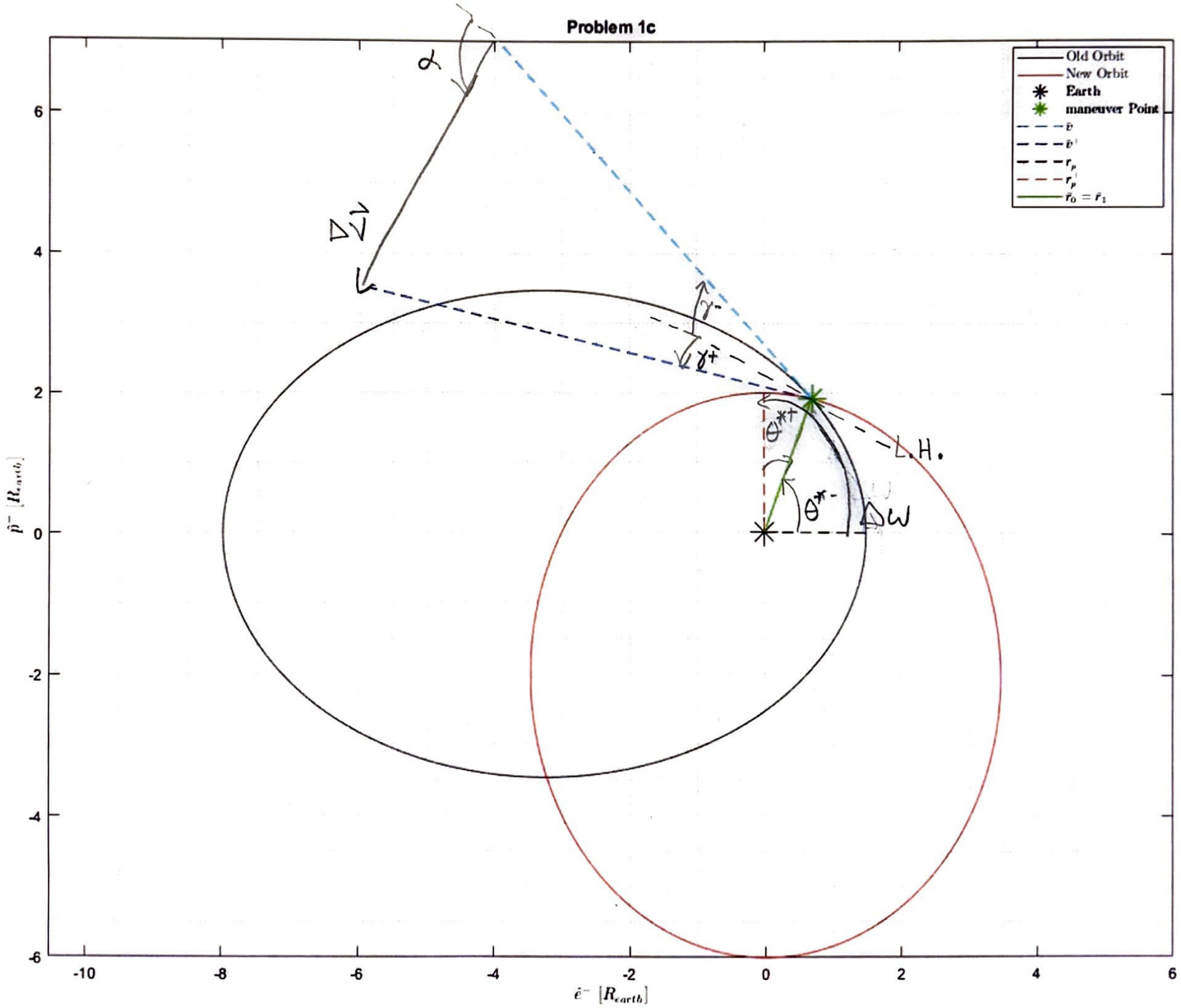
1b)





$$\frac{\sin(\beta)}{\vec{V}^+} = \frac{\sin(\Delta\gamma)}{\Delta\bar{V}}$$




Problem 1c
Old Orbit
New Orbit
Earth
maneuver Point
$\bar{v}$
$\bar{v}^+$
$\bar{r}_p$
$\bar{r}_p^+$
$\bar{r}_0 = \bar{r}_1$
α
$\Delta\bar{V}$
γ^-
γ^+
θ^{*+}
θ^{*-}
$\Delta\omega$
L.H.
$\hat{p}^-\ [R_{earth}]$
$\hat{e}^-\ [R_{earth}]$
6
4
2
0
-2
-4
-6
-10
-8
-6
-4
-2
0
2
4
6