

Homework #5 – ASEN 5050

Due: Thursday, 10/8/2015

Name: John Clouse

Note: Use Appendix D of the book for all constants not given in the problem.

Please put your answers in this Answer Sheet (or something similar), and then show all work as usual below.

1. (30 pts):

Planet	Orbital Radius (km)	ΔV_1 (km/s)	ΔV_2 (km/s)	Total ΔV (km/s)	Transfer Duration (years)
Earth	149598023	----	----	----	----
Venus	108208601	-2.495	-2.707	5.202	0.400
Mars	227939186	2.945	2.649	5.594	0.709
Jupiter	778298361	8.793	5.643	14.436	2.731

2. (20 pts): Earth–Sun–Mars phasing angle: -44.34 deg

Synodic period: 2.14 years

3. (20 pts): ΔV_1 : 0.146 km/s ΔV_2 : -0.146 km/s

Total ΔV : 0.291 km/s Transfer Duration: 14847 sec

4. (30 pts):

Transfer Option	ΔV_1 (km/s)	ΔV_2 (km/s)	Total ΔV (km/s)
5 minutes	1.292e-3	1.205e-3	2.497e-3
30 minutes	0.450e3	0.109e-3	0.558e-3