

1. Problem 5.2
2. Problem 5.4
3. Problem 5.6
4. Consider the space triangle for an earth-Mars transfer shown in Fig. 5.8. Solve Lambert's equation using MATLAB *fsolve* to determine the semimajor axis  $a$  (in AU) of the elliptic transfer, if it exists, for each of the following transfer times,
  - a) 0.17 years
  - b) 0.34 years
  - c) 0.90 years

Explain your answers, include the code and the solution output.