

AEM 338 Problem Set #1

Due: 6th Feb 2017 by 5:00pm

Prepare solutions to the following problems. Write on engineering or regular 8.5x11 paper and staple on the top left corner. Write out problem statement and assumptions. Provide calculations. Write a 1 sentence summary of what you learned. No more than one problem per page. Box your final answers.

1. ADP problem 3.5
2. FSAC problem 1.4
3. A V-tail Beechcraft Bonanza with a 300 hp IO-550 naturally aspirated piston engine (2700 RPM maximum) has an 80 inch variable-pitch propeller. The Bonanza has a wing area of 177 ft² and a wingspan of 32 ft and a zero-lift drag coefficient of 192 counts. Use an Oswald efficiency factor of 0.8. The aircraft weights 3600 lbf. If the propeller efficiency is 85%, what is the maximum steady level flight (SLF) true airspeed on a standard day at 10000 ft?