Problem 1. Plot the range (R expressed in meters) to the target versus aircraft position x.

Problem 2. Plot the angle (expressed in degrees) between the aircraft’s velocity vector and the range vector versus aircraft position x.

Problem 3. Plot the antenna gain (on a decibel scale) in the direction of the range vector versus aircraft position x. [use the sin(x)/x antenna radiation pattern model]

Problem 4. Plot (on a decibel scale) the ratio of P_r/P_t versus the aircraft position x.

Problem 5. Plot the Doppler shift (expressed in Hertz) of the target’s echo versus aircraft position x.