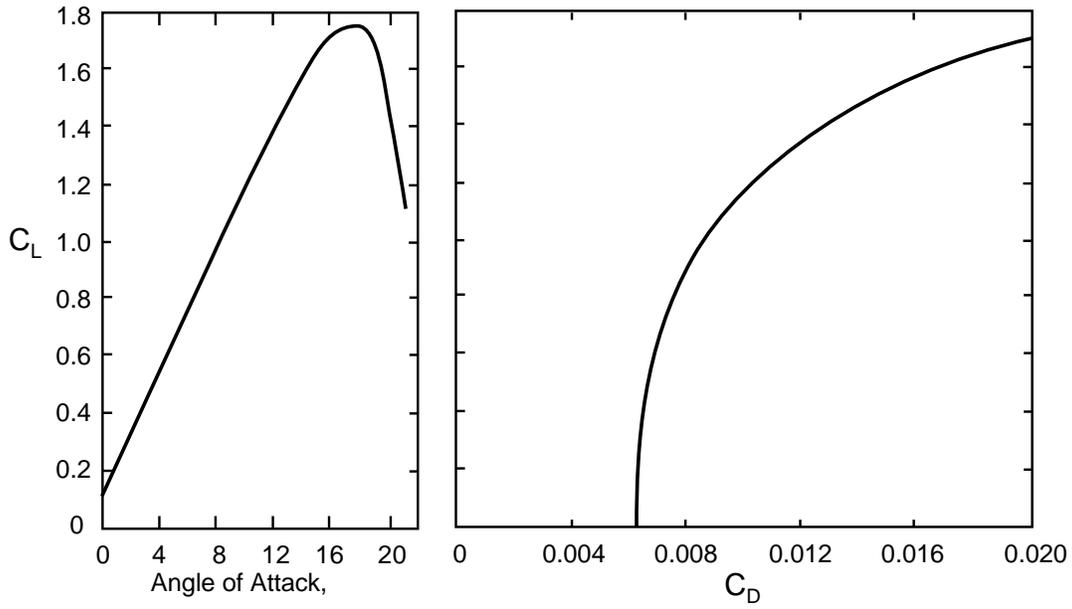


Problem 292B

A glider weighs 2000 kg m/s^2 , has a wing planform area of 10 m^2 and flies through air with density 1.0 kg/m^3 . The lift and drag characteristics of the wings are as follows:



1. If the wing lift characteristic is as shown on the left above, calculate the **stall** speed for horizontal flight assuming zero drag.
2. In fact, the drag on the glider causes the glider to continuously lose altitude when flying through still air. The inclination of this trajectory to the horizontal is called the *glide angle*. Find the *minimum* glide angle if the drag is as given in the right graph above. Neglect any drag on the other parts of the glider such as the fuselage. What is the horizontal component of the velocity of the glider under these conditions?