1. Nancy shines a light from a window of Rocky Rococco's beachside mansion on a cliff 250 feet above the water level. Nick Danger, in a ship off-shore, finds that the angle of elevation from his boat to Nancy and the light is 3.45$°$. How far is Nick Danger from the base of the cliff?

2. A plane is flying at 194 mph with a heading of 24.3$°$ from due north. The wind is blowing a constant 30 mph at 142.7$° $from due north. Find the ground speed and true course of the plane.