

Provide a clear and organized presentation. Show all of your work, completely simplify all answers, and give exact values only.

1. An aircraft travels due north at 250 mph, but there is a wind blowing into the direction of S50°E at 50 mph and an updraft at 30 mph. What is the true speed of the aircraft?
2. Determine the distance between the point  $(3,4)$  and the line whose equation is  $2x + 3y = 5$ .