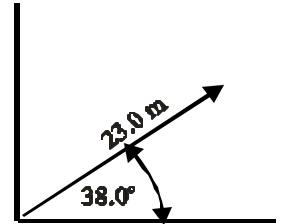


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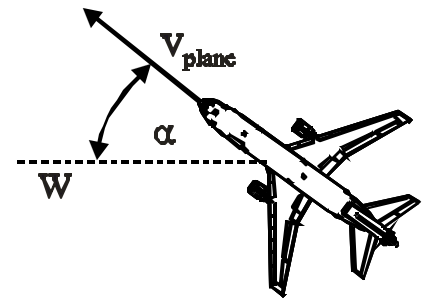
PHYSICS QUIZ #3D TWO DIMENSIONAL MOTION

1. Determine the i and j components of the vector at the right. [3 pts]



2. In order for an airplane to arrive at its destination on time it must fly with a velocity of $v_{\text{plane}} = 425$ m/sec on a heading of $\alpha = 25.0^\circ$ North of West. On this particular day the wind is blowing South with a velocity of $v_{\text{wind}} = 135$ m/sec.

a. What will be the resulting direction of the velocity of this airplane if no effort is made to compensate for the effects of the wind? [3 pts]



b. What will be the resulting magnitude of the velocity of this airplane if no effort is made to compensate for the effects of the wind? [3 pts]

c. What will be the displacement [give both magnitude and direction] of this plane after flying with this velocity for 2.5 hours? [3 pts]

d. What should the velocity [give both magnitude and direction] of this airplane be if it is to arrive at its destination on time? [3 pts]