

Section 6: Airplane Navigation

$${}_p\overrightarrow{V_e} = {}_p\overrightarrow{V_a} + {}_a\overrightarrow{V_e}$$

Symbol	Velocity Vector	Speed	Direction
${}_pV_e$			
${}_pV_a$			
${}_aV_e$			

1. An airplane has an air speed of 240 km/h and a heading of east. An 80.0 km/h wind is blowing from the north.  
A) Calculate the plane's ground speed and tracking.

B) What is the plane's displacement after 2.3 hours.

2. A pilot wants to fly due South. The airplane has an air speed of  $2.0 \times 10^2$  km/h. There is a 62 km/h wind blowing from the East.

A) Determine the heading the pilot should use.

B) Determine the pilot's ground speed.

C) How long will it take him to get to his destination which is 350 km [W] of his initial position?