1. A hiker leaves camp and walks 13 km due north. The hiker then walks 15 km northeast (exactly midway between north and east). Find the hiker’s direction and displacement from her starting point.
2. A pilot flies a plane east for 200 km, then 60° south of east for 80 km. Find the plane’s distance and direction from the starting point.
3. An airplane flies due west at 185 km/h with respect to the air. There is a wind blowing at 85 km/h to the northeast. What is the plane’s speed and direction from the starting point?
4. An airplane travels on a bearing of 100° at an airspeed of 190 km/h while a wind is blowing 48 km/hr from a bearing of 220° find the ground speed and direction of the plane from its starting point.
5. A ship leaves port at 1 pm traveling north at the speed of 30 miles/hour. At 3 pm, the ship adjusts its course 20 degrees eastward. How far, and at what bearing, is the ship from the port at 4pm?