Ch 3 - Page 94 - Practice Problems C – Adding Vectors Algebraically

1. A football player runs directly down the field for 35 m before turning to the right at the angle of 25° from his original direction and running an additional 15 m before getting tackled. What is the magnitude and direction of the runner’s total displacement?

1. A plane travels 2.5 km at an angle of 35° to the ground and then changes direction and travels 5.2 km at an angle of 22° to the ground. What is the magnitude and direction of the plane’s total displacement?
2. During a rodeo, a clown runs 8.0 m north, turns 55° north of east and runs 3.5 m. Then, after waiting for the bull to come near, the clown turns due east and runs 5.0 m to exit the arena. What is the clown’s total displacement?
3. An airplane flying parallel to the ground undergoes two consecutive displacements. The first is 75 km 30.0° west of north, and the second is 155 km 60.0° east of north. What is the total displacement of the airplane?