More Vector Addition Problems

1. A car travels at 60 km/h 090° for 0.40 h and then travels at 90 km/h 180° for an additional 0.50 h. Calculate

   (a) the average speed for the whole trip.   (77 km/h)

   (b) the average velocity for the whole trip.   (57 km/h 152°)

2. A person runs 120.0 m 090° and then goes an additional 80.0 m 180°. The entire trip takes 40.0 s.

   (a) Find the resultant displacement.   (144 m 124°)

   (b) Calculate the average velocity for the entire trip.   (3.60 m/s 124°)

   (c) Calculate the average speed for the entire trip.   (5.00 m/s)

3. A trapper walks 2.00 km 180° then walks 5.00 km 270° in a total time of 2.00 h.

   (a) What is her final displacement?   (5.39 km 248°)

   (b) What is her average velocity?   (2.70 km/h 248°)

   (c) What is her average speed   (3.50 km/h)

4. A car travels at 50 km/h North for 0.80 h and then turns and travels at 90 km/h West for 0.50 h. Calculate

   (a) the average velocity for the whole trip.   (46 km/h 312°)

   (b) the average speed for the whole trip.   (65 km/h)

5. A cyclist travels 20 km South in 1.5 hours and then turns and travels 30 km West in 2.5 h. Find

   (a) the average velocity for the whole trip.   (9.0 km/h 236°)

   (b) the average speed for the whole trip.   (13 km/h)