

### Solving Problems Involving Vectors

Example 1      Angela drives 15km south and then 12km west. Determine the magnitude and direction (as a quadrant bearing) of the resultant displacement.

Example 2      A car travels east at 90 km/h for 3 hours, and then north at 80 km/h for 2 hours. Determine the magnitude and quadrant bearing of the resultant displacement.

Example 3 An airplane is flying with airspeed 455 km/h on a heading of  $110^\circ$ . There is a 50 km/h wind blowing from the direction  $90^\circ$ .

- a. Draw a vector diagram of the resultant vector,  $r$ .
- b. Calculate the ground velocity of the airplane.