Name _____ Date _____

60	Vectors and More

$d = vt$ $v_f = v_i + at$ $d = v_i t + (1/2)at^2$ $g = 9.8\ m/s^2$

1) A person travels 45 miles to the west. They then travel 75 miles to the south. Draw a head to tail diagram for this scenario. Calculate the person's resultant displacement. In other words, calculate how far they are from their starting point.

2) A plane heads to the north at 200 m/s but a wind pushes it to the east at 50 m/s.
   a) What is the resultant velocity of the plane?
   b) How far does the plane travel in 2 hours?

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3) A projectile is fired horizontally at a speed of 50 m/s from a height of 4 m.
What was the range of the projectile?

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4) A car travels at a constant speed for 7 seconds. The car then accelerates at 4 m/s^2 for 5 seconds. During the 5 seconds of acceleration, the car travels 200 m. How far does the car travel all together?

Answers: 1) 87.5 m 2a) 206 m/s b) 1,483,200 m 3) 45 m 4) 410 m