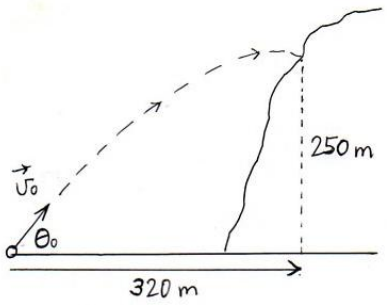
General Physics I **Recitation Quiz - Units, Vectors, Projectiles** **Sep. 15, 2009**

Name:

For full credit, make your work clear. Don't forget to show the formulas you use, all the essential steps, and results with correct units and correct number of significant figures. Use $g = 9.80$ m/s^2.

1. (3) A turtle is walking at a constant speed of 1.40 cm/s. What is his speed in kilometers per day? Show all the conversion factors you use, with their units.

2. A projectile is launched with some unknown initial velocity $\vec{v}_0 = (v_{0x}, v_{0y})$ from ground level, and lands on a cliff 320 m away and 250 m high 7.6 seconds after it was launched. Neglect air resistance.



a) (1) During its flight, which quantity for the projectile does not change?

a. v_x b. v_y c. its speed. its direction of motion.

a) (3) Find the horizontal component of the projectile's initial velocity.

b) (3) Find the vertical component of the projectile's initial velocity.