Math 124 Quiz #7
May 20, 2008

Name: _____

Show all work.

1. The position of an African swallow carrying a coconut (gripping it by the husk) is given by
$$s = t^3 - 9t^2 + 15t + 10 \text{ in feet at } t \text{ seconds.}$$

   (a) (2 pts.) What is the **speed** of the swallow at 4 seconds? (Include **units** in your answer.)

   (b) (4 pts.) When is the swallow at rest? When is the swallow moving in the positive direction?

2. (4 pts.) Two cars are traveling away from an intersection*. One car travels north at a constant speed of 40 mph and the other travels east at a constant speed of 30 mph.
   At what rate is the **distance between them** increasing when the northbound car is 1.5 miles from the starting point and the eastbound car is 2 miles from the starting point?

*Note: The cars do not necessarily leave the intersection at the same time.