

231 Quiz 6

March 17, 2011

Name _____

By printing my name I pledge to uphold the Honor Code.

Work individually. You may use your Notebooks but no loose papers, printouts, photocopies, books, calculators, cell phones, or other resources.

1. For each function or implicit function $y = y(x)$, find $\frac{dy}{dx}$.

a) $y = (x\sqrt{3x+1})^{-3}$

b) $x^2 + xy^3 = 2$

2. Suppose that a spaceship taking off from Earth's orbit is moving at velocity $v(t) = 0.014t^2 + 300$ thousands of miles per hour.

a) Find a formula for the acceleration $a(t)$ of the spaceship. What are the units of $a(t)$?

b) Find a formula for the position $s(t)$ of the spaceship, given that its initial position is $s_0 = 0$ thousands of miles from Earth's orbit. What are the units of $s(t)$?