

Name: _____

Math 125 Quiz 2

April 21, 2006

1. $\int (3 - \sqrt{x})^2 dx = ?$

2. $\int_0^{\pi/4} [\sec^2(x) + \sec(x)\tan(x)] dx = ?$

3. Find $f(x)$ so that $\int_1^x [t^2 f(t) + 3] dt = 3x + x^3 + x^4 - 5$.

4. A European swallow can only fly for 12 hours if carrying a coconut. If the swallow begins flying at $t = 0$, then the airspeed velocity of the laden swallow is given by $v(t) = -\frac{1}{2}t^2 + 4t + 10$.

(a) What is the maximum airspeed velocity of the swallow?

(b) What is the distance travelled by the swallow after 12 hours? (Note: The swallow does fly backward for a period of time since it is easily confused.)