21-112 Calculus II

Homework #1

September 2, 2005

6.1.14. Find the value of k that makes the antidifferentiation formula ture. (Note: You can check your answer without looking in the answer section of the text. How?)

$$\int 3e^{t/10}dt = ke^{t/10} + C$$

6.1.26. Determine

$$\int \left[\frac{\sqrt{t}}{4} - 4(t-3)^{-2}\right] dt$$

6.1.33. Find all functions $f(t)$ with the property

$$f'(x) = x, f(0) = 3$$

6.1.38. Find the expression for the function $f(x)$ which satisfies

1. $f'(x) = \frac{1}{3}$, and
2. the graph of $y = f(x)$ passes through the point $(6, 3)$.

6.1.44. The graph of the function $g(x)$ is obtained by shifting the graph of $f(x)$ up two units. What is the derivative of $h(x) = g(x) - f(x)$.