Math Xb Spring 2004
Worksheet: The Substitution Rule
April 21, 2004

1. Evaluate the following integrals.

   (a) $\int (6x^2 + 2)\sin(x^3 + x + 1)\,dx$

   (b) $\int (1 + x^3)^{3/2} x^2\,dx$

   (c) $\int_0^4 \sqrt{2x + 1}\,dx$

   (d) $\int_{-\pi}^{\pi} x^2 \sin 7x\,dx$

   (e) $\int x^2 e^{x^3}\,dx$

   (f) $\int \dfrac{\tan^{-1} x}{1 + x^2}\,dx$

   (g) $\int_0^{\pi/4} \tan x\,dx$

2. Suppose that $\int_0^{12} g(x)\,dx = \dfrac{\pi}{12}$. Evaluate $\int_0^3 g(4x)\,dx$.