u-SUBSTITUTION

TEXT: 4.6

LAST NAME	FIRST NAME	DATE

1 (9 points)**.** Evaluate the integral by making a suggested u-substitution:

(a) $\int \sin(3x)\,dx,\ u = 3x$

(b) $\int x(x^2+3)^{17}\,dx,\ u = x^2+3$

(c) $\int \frac{5e^x}{\sqrt{1-e^{2x}}}\,dx,\ u = e^x$

2 (9 points)**.** Evaluate the integral:

(a) $\int_0^1 (3t-1)^{50}\,dt$

(b) $\int_0^3 \frac{dx}{5x+1}$

(c) $\int_0^a x\sqrt{a^2-x^2}\,dx$, where $a > 0$ is a constant.

(d) $\int \frac{4x}{\sqrt{2x^2+1}}\,dx$

(e) $\int \frac{\sin(\sqrt{x})}{\sqrt{x}}\,dx$