Math 165: Honors Calculus I Name:_____
Quiz 5 *Oct. 6, 1994*

1. Use the Invariance Under Translation property of integrals to calculate $\int_{-1}^{1} (x+1)^{100}\,dx$.

2. Let f be an integrable function on $[-b, b]$.

   a) Suppose $f(-x) = -f(x)$ for all x in $[-b, b]$.
   Prove that $\int_{-b}^{b} f(x)\,dx = 0$.

   b) Suppose $f(-x) = f(x)$ for all x in $[-b, b]$.
   Prove that $\int_{-b}^{b} f(x)\,dx = 2\int_{0}^{b} f(x)\,dx$.

   c) Find $\int_{-3}^{3} x\sqrt{9-x^2}\,dx$.

3. Find the area between the graphs of $f(x) = x^2 - 1$ and $g(x) = x$ on $[-1, 1]$.