

## Solutions to Quiz 16

MATH 139-02  
Thursday, April 22, 2004

1. Evaluate each indefinite integral (antiderivative).

(a)  $\int x^4 dx$

**Solution:**  $\int x^4 dx = \frac{x^5}{5} + C.$

(b)  $\int \frac{1}{\sqrt{x}} dx$

**Solution:**  $\int \frac{1}{\sqrt{x}} dx = \int x^{-1/2} dx = \frac{x^{1/2}}{1/2} + C = 2\sqrt{x} + C.$

(c)  $\int \frac{1}{x} dx$

**Solution:**  $\int \frac{1}{x} dx = \ln|x| + C.$

(d)  $\int 3^x dx$

**Solution:**  $\int 3^x dx = \frac{3^x}{\ln(3)} + C.$