

# Integration Worksheet

For problems 1-4, evaluate the indefinite integral (antiderivative). For problems 5-7 evaluate the definite integrals. Complete the assignment on a separate piece of paper.

1.  $\int 3x^4 dx$

5.  $\int_2^5 9dy$

2.  $\int (3 - 2t - t^2) dt$

6.  $\int_1^8 r^2 dr$

3.  $\int \left[ \frac{2}{x^3} + \frac{3}{x^2} + 5 \right] dx$

7.  $\int_{0.5}^4 (x^3 - 6x^2 + 9x + 1) dx$

4.  $\int t^2(4 - t^2)^3 dt$

8. Express with an integral the area of a circle of radius R (begin with a semicircle and then double).

# Table of Integrals

1.  $\int k dx = kx + C$

2.  $\int x^n dx = \frac{1}{n+1} x^{n+1} + C$

3.  $\int \frac{dx}{x} = \ln|x| + C$

4.  $\int \sin x dx = -\cos x + C$

5.  $\int \cos x dx = \sin x + C$

6.  $\int e^x dx = e^x + C$