Calc AB----Notes **Name**_____

Section 4.5 Day 2

Integration by Substitution: find the indefinite integral.

1. $\int \pi \cos \pi x dx$

2. $\int x \sin x^2 dx$

3. $\int \frac{\sin x}{\cos^3 x} dx$

4. $\int \sqrt{\tan x} \sec^2 x dx$

Find a equation for the function that has the given derivative and whose graph passes through the given point.

5. $f'(x) = \sec^2(2x) \quad \left(\frac{\pi}{2}, 2\right)$

Find the indefinite integral by the method in Ex 5 in the book.

6. $\int x\sqrt{3x+1}dx$

Evaluate the definite integral. Check using your calculator

7. $\int_{-2}^{4} x^2(x^3+8)^2dx$

8. $\int_{1}^{2}(x-1)\sqrt{2-x}dx$

Evaluate the integral using the properties of even and odd functions as an aid.

Integration of Even and Odd Functions:

Let f be integrable on the closed interval [-a, a].

1. If f is and even function, then $\int_{-a}^{a} f(x)dx = 2\int_{0}^{a} f(x)dx$

2. If f is and odd function, then $\int_{-a}^{a} f(x)dx = 0$

Evaluate the integral using the properties of even and odd functions as an aid.

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