6.9 Integrating Using Substitution

Calculus Name: _____ **CA #1**

Find the indefinite integrals.

1. $\int x(x^2+3)^5\,dx$

2. $\int \sin(x)\cos^3(x)\,dx$

3. $\int \frac{2x-1}{x^2-x+5}\,dx$

4. $\int \cos x\,\sqrt{\sin x}\,dx$

5. $\int \frac{x^3}{(5x^4+2)^3}\,dx$

Evaluate the definite integrals.

6. $\int_0^1 x(x^2+1)^3 dx$

7. $\int_0^2 3x^2\sqrt{x^3+1}\,dx$

8. $\int_1^2 e^{1-x} dx$

9. $\int_1^e \frac{(1+\ln x)^2}{x}\,dx$

10. $\int_0^{\frac{\pi}{8}} \tan(2x)\sec^2(2x)\,dx$

Answers to 6.9 CA #1

1. $\frac{1}{12}(x^2+3)^6+C$	2. $-\frac{1}{4}\cos^4 x+C$	3. $\ln\lvert x^2-x+5\rvert+C$	4. $\frac{2}{3}(\sin x)^{\frac{3}{2}}+C$		
5. $\frac{-1}{40(5x^4+2)^2}+C$	6. $\frac{15}{8}$	7. $\frac{52}{3}$	8. $1-\frac{1}{e}$	9. $\frac{7}{3}$	10. $\frac{1}{4}$