6.11 Integration by Parts

Calculus Name: _____ **CA #1**

Find the integral.

1. $\int x \sec^2 x \, dx$

2. $\int x \cos x \, dx$

3. $\int_1^2 x \ln x \, dx$

4. $\int 3x \ln x^2 \, dx$

5. $\int x \cos 4x \, dx$

6. The function f has a continuous derivative. The table gives the values of f and its derivatives for $x = 2$ and $x = 7$. If $\int_2^7 f(x) \, dx = 10$, what is the value of $\int_2^7 2xf'(x) \, dx$?

x	$f(x)$	$f'(x)$
2	3	5
7	9	-4

Answers to 6.11 CA #1

1. $x \tan x + \ln\lvert\cos x\rvert + C$	2. $x \sin x + \cos x + C$	3. $2 \ln 2 - \frac{3}{4}$
4. $\frac{3}{2}x^2 \ln x^2 - \frac{3}{2}x^2 + C$	5. $\frac{x}{4}\sin 4x + \frac{1}{16}\cos 4x + C$	6. 94