My Office Hours: M & W 2:30–4:00, Tu 2:00–3:30, & F 1:30–2:30 or by appointment. **Math Intern:** Sun: 2:00–5:00, 7:00–10pm; Mon thru Thu: 3:00–5:30 and 7:00–10:30pm in Lansing 310. Website: `http://math.hws.edu/~mitchell/Math131F15/index.html`.

☕ *Practice and Reading*

1. (*a*) Reread and review Section 5.5 on substitution, which we will finish next class.

(*b*) ✍ Practice substitution while things are still relatively simple! Page 391 #9–23 odd, 27.

Hand In Next Class (Also WeBWorK Sets Substitution1 (Due Sunday) and Day09 (Due Tuesday))

Use this sheet. ☞ Be neat so that I can grade these quickly and get them back to you. Put a box around your answers so I can find them. Clearly note any substitution.

2. Determine $\displaystyle\int 3x^2(x^3+9)^{-5}\,dx$.

3. Determine $\displaystyle\int \cos x\sqrt{4+2\sin x}\,dx$.

4. Determine $\displaystyle\int \frac{(\ln t)^3}{t}\,dt$.

5. Determine $\displaystyle\int (x+2)\sin(x^2+4x)\,dx$.

6. Determine $\displaystyle\int \frac{x^5}{1+4x^6}\,dx$.

7. Fill in the blank with a function that makes this an easy problem and then solve it. $\displaystyle\int e^{x+\tan x}(\underline{\hspace{2cm}})\,dx$.

8. Starting Integration Problems. Sometimes starting a problem is the hardest thing. Decide which method is appropriate for each: basic rules, algebraic simplification, "mental adjustment," still others require u-substitution. Complete the table. **You do not actually have to do the antidifferentiation.**

Integral	Method	If u-sub, then $u =$? and $du =$?
$\displaystyle\int (3x+2)(6x^2+8x)^5\,dx$		
$\displaystyle\int (3x+2)(6x+8)\,dx$		
$\displaystyle\int \frac{1}{5\sqrt[4]{x^3}}\,dx$		
$\displaystyle\int \sec^2(3x)\,dx$		
$\displaystyle\int \sin(\cos x)\sin x\,dx$		
$\displaystyle\int \frac{4}{1+x^2}\,dx$		
$\displaystyle\int \frac{4x}{1+x^2}\,dx$		
$\displaystyle\int \frac{1+x^2}{x}\,dx$		
$\displaystyle\int \frac{t}{\sqrt{1-t^2}}\,dt$		
$\displaystyle\int \frac{1}{\sqrt{1-t^2}}\,dt$		