

Maple Assignment # 2

Math 152, Sections 301-302

Due Date: June 26th, 2007

The Assignment

Use Maple to solve the problems from your third quiz (given below) and make sure that the answers that Maple gives are the same (up to a constant) with the answers gotten in class.

The problems and their answers:

- $\int \tan^5 x \sec^3 x dx = \frac{1}{7} \sec^7 x - \frac{2}{5} \sec^5 x + \frac{1}{3} \sec^3 x + C$
- $\int \tan^4 x \sec^4 x dx = \frac{1}{7} \tan^7 x + \frac{1}{5} \tan^5 x + C$
- $\int \sin(4x) \sin(5x) dx = -\frac{1}{2} \sin(-x) - \frac{1}{18} \sin(9x) + C$
- $\int \frac{3x^2+x+2}{x^3+x} dx = 2 \ln(|x|) + \frac{1}{2} \ln(x^2 + 1) + \arctan(x) + C$
- $\int \frac{x^2}{\sqrt{4x-x^2}} dx = -\frac{u\sqrt{4-u^2}}{2} - 4\sqrt{4-u^2} + 6 \arcsin(\frac{u}{2}) + C$, where $u = x - 2$

If an answer you get from Maple differs from the one given, make sure to either make Maple rewrite that answer (the commands **simplify** and/or **expand** will help here) or put a comment (or an additional Maple calculation) that will convince me that both answers are the same.

You may also want to look at the command **algsubs**, which will be particularly useful in the last problem above, where I've given the answer in terms of u .

Notes

This simple Assignment is also intended to serve as an attendance check. As such you do not need to turn it in, if you've shown to me in class that you have done it, and I have recorded your grade.

As a courtesy to people unable to attend this particular Lab (June 21st), the due date is extended to Tue, June 26th.