

Trigonometric Substitution Groupwork Day 2

MATH 131: Calculus II, Section 1

March 26, 2014

Evaluate the following integrals (remember ALL your tools in your toolbox!):

(1) Check out Section 7.2 exercise 35 on page 466 if you haven't yet!

(2) $\int \frac{1}{(5-4x-x^2)^{\frac{5}{2}}} dx$ (Remember the trick we mentioned for the last example on Monday's groupwork!)

$$\frac{x+2}{81\sqrt{5-4x-x^2}} + \frac{(x+2)^3}{243(5-4x-x^2)^{3/2}} + C$$

(3) $\int \frac{\sqrt{25x^2+9}}{x^4} dx$ (You can do this the book's way or the way we discussed in lab.)

$$-\frac{(25x^2+9)^{3/2}}{27x^3} + C$$

(4) $\int (x+1)\sqrt{x^2+2x+2} dx$

$$\frac{1}{3}(x^2+2x+2)^{3/2} + C$$

(5) Review: $\int \sec^5 x \tan^7 x dx$

$$\frac{1}{11} \sec^{11} x - \frac{1}{3} \sec^9 x + \frac{3}{7} \sec^7 x - \frac{1}{5} \sec^5 x + C$$