College of the Holy Cross, Spring Semester, 2019
Math 134 Worksheet 9
Due Tuesday, March 12

1. Evaluate each of the following integrals.

   (a) $\displaystyle\int \sin^3(x)\cos^5(x)\,dx$

   (b) $\displaystyle\int \cos^4(x)\sin^2(x)\,dx$

   (c) $\displaystyle\int \frac{\cos^3(x)}{\sin^5(x)}\,dx$

   (d) $\displaystyle\int \sec^3(x)\tan(x)\,dx$

   (e) $\displaystyle\int \sec^3(x)\tan^2(x)\,dx$

   (f) $\displaystyle\int \sec^4(x)\tan^2(x)\,dx$

2. Use a trigonometric substitution to evaluate the following.

   (a) $\displaystyle\int x^2\sqrt{9-x^2}\,dx$

   (b) $\displaystyle\int \frac{x^2}{(25+x^2)^{3/2}}\,dx$

   (c) $\displaystyle\int \sqrt{x^2-16}\,dx$

   (d) $\displaystyle\int \sqrt{x^2+16}\,dx$

   (e) $\displaystyle\int \frac{1}{(9-x^2)^{3/2}}\,dx$

   (f) $\displaystyle\int \frac{\sqrt{x^2-9}}{x}\,dx$