Stewart, Outline #7.2: Trigonometric Integrals

Outcome, you should be able to...	**Show that you are able to do this.**	**How will you not forget what you have learned?**
State the strategy for evaluating $\int \sin^m x \cos^n x \; dx$	(a) If the power of cosine is odd, save one cosine factor and express rest i.t.o sine. (b) If the power of sine is odd, save one sine factor and express rest i.t.o cosine. (c) If the powers of both sine and cosine are even, use the half-angle identities.	x
State the strategy for evaluating $\int \tan^m x \sec^n x \; dx$	(a) If the power of secant is odd, save one $sec^2 x$ factor and express rest i.t.o tangent. (b) If the power of tangent is odd, save one $\sec x \tan x$ factor and express rest i.t.o secant.	x
State the integral of tangent and derive the integral of secant.	$\int \tan x \; dx = \ln \lvert \sec x \rvert + C$, $\int \sec x \; dx = \ln \lvert \sec x + \tan x \rvert + C$ (p. 464)	x
State the product formulas.	$\sin x \cos y = \frac{1}{2}[\sin(x+y) + \sin(x-y)]$, $\cos x \cos y = \frac{1}{2}[\cos(x+y) + \cos(x-y)]$, $\sin x \sin y = \frac{1}{2}[\cos(x-y) - \cos(x+y)]$	x