Integration Techniques

Evaluate the integral.

- $$\int x \cos 5x \ dx$$

- $$\int \arctan 4t \ dt$$

- $x \tan^2 x \ dx$

- $\displaystyle\int_0^1 t\cosh t \ dt$

- $\displaystyle\int_0^{\frac{\pi}{2}} \sin^7\theta \cos^5\theta \ d\theta$

A GUIDE TO
INTEGRATION BY PARTS:

GIVEN A PROBLEM OF THE FORM:

$$\int f(x)\,g(x)\,dx = ?$$

CHOOSE VARIABLES u AND v SUCH THAT:

$$u = f(x)$$
$$dv = g(x)\,dx$$

NOW THE ORIGINAL EXPRESSION BECOMES:

$$\int u\,dv = ?$$

WHICH *DEFINITELY* LOOKS EASIER.

ANYWAY, I GOTTA RUN.

BUT GOOD LUCK!