

Practice Test 2 (Hints)

1. $\int e^{\tan x} \frac{\sin x}{\cos^3 x} dx$ (A simple U substitution followed by integration by parts)

2. $\int x \cos^2 x dx$ (use double and formula to replace $\cos^2 x$. Then use parts)

3. $\int e^x (\ln x + \frac{1}{x}) dx$ Type equation here.

Hint: Notice that this has a general form $\int e^x (f(x) + f'(x)) dx$.

Show that this type of integral is equal to $f(x)e^x$, by using parts on $\int e^x f(x)$

4. $\int \frac{x}{(1+x^6)} dx$ (use $u = x^2$ to bring this to $\int \frac{1}{(u^3+1)}$ form. Now use partial fractions after expanding denominator)