

Math 3B — Week 2

Integration by u -substitution Evaluate each of the following integrals.

(a) $\int x^2 \tan(x^3) dx$

(e) $\int \frac{2 \sin(x)}{1 + \cos(x)} dx$

(b) $\int (x^2 + x^3)^2 (2x + 3x^2) dx$

(f) $\int \sin^3(x) \cos(x) dx$

(c) $\int x e^{x^2} dx$

(g) $\int \sin^4(7x) \cos(7x) dx$

(d) $\int \frac{\sin(\ln(x))}{x} dx$

(h) $\int \left(\int_0^y x^2 \sqrt{1+x^3} dx \right)^7 y^2 \sqrt{1+y^3} dy$
(Hint: FTC!)



Definite Integrals with u -substitutions Redo the last page as definite integrals using both methods of computing definite integrals that require u -substitutions.

