

ASSIGNMENT 13

MTH101 (2014)

- (1) State the second fundamental theorem of calculus.
- (2) Using integration by parts or otherwise, calculate the following indefinite integrals
 - (a) $\int x^2 e^{2x} dx$.
 - (b) $\int x \sin(3x) dx$.
 - (c) $\int x \log(x) dx$.
- (3) Using integration by parts or otherwise find $\int_0^{\pi/2} \cos^2(x) dx$.
- (4) Using integration by substitution or otherwise, calculate the following integrals
 - (a) $\int x \cos(x^2) dx$.
 - (b) $\int_0^1 \sqrt{1-x^2} dx$