



Prince Sultan University
Department of Mathematical Sciences
MATH 113 – Third Examination
14 January 2009

Time allowed: 45 minutes
Maximum points: 30 points

Dr. Bahaa Eldin Abdalla

1. (25 points) Evaluate each integral.

(a) $\int \frac{x^5 + 4x^3 + 1}{x^2 + 4} dx$

(b) $\int \coth x \, dx$

(c) $\int \sin^{-1} x \, dx$

(d) $\int \tan^4 x \sec^4 x \, dx$

(e) $\int \frac{dx}{(1-x^2)^{3/2}}$

2. (5 points) Find $\lim_{x \rightarrow \infty} xe^{-x}$.