

CS 59000-NMC, 30 August 2011

Your name:

Please answer the following questions. You may not use any outside references or technology. Justify and explain all answers. This quiz is for my own evaluation, so that I can provide better instruction in the course.

Question

Consider the vector 1-norm. Show that

$$\|\mathbf{x}\|_{\infty} \leq \|\mathbf{x}\|_1 \leq n\|\mathbf{x}\|_{\infty}.$$

When is the inequality an equality?