Math 31B. Quiz 2A. Thursday, Oct. 13, 2005

Answer each question in pencil on your Scantron card. Put your name and Section number (i.e. 1a, 3c, etc.) on your Scantron card. You have 20 minutes. Good luck!

1. The integral $\int_e^{e^4} \frac{1}{x \ln x} dx =$

A. $\ln 2$; *B.* ∞; *C.* $\ln 3$; *D.* $\ln 4$; *E.* none of the above.

2. The integral $\int_{-1}^{0} \frac{1}{1+x^2} dx =$ $-\tan^{-1}(-1) = \frac{\pi}{4}$

A. $\frac{\pi}{2}$; *B.* ∞; *C.* $-\frac{\pi}{2}$; *D.* 1; *E.* none of the above.

3. $\lim_{x \to 0+} \frac{\sinh x}{\sin x} =$ $\lim_{x \to 0+} \frac{\cosh x}{\cos x} = 1$

A. ∞; *B.* 1; *C.* 0; *D.* π; *E.*none of the above.

4. $\lim_{x \to +\infty} (\cosh x - \sinh x) =$ $\lim_{x \to \infty} \frac{1}{2}\left(e^x + e^{-x} - (e^x - e^{-x})\right) = \lim_{x \to \infty} e^{-x} = 0$

A. ∞; *B.* 1; *C.* 0; *D.* $-\infty$ *E.*none of the above.