Don't forget your name: _____   **Score:** _____ /30

1) Evaluate each of the following integrals. If it is improper, state whether it converges or diverges (and the value if it converges).

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

b) $\displaystyle \int \frac{3x^3 + 4x^2 + 4x + 8}{x^4 + 4x^2}\,dx$

c) $\displaystyle \int_0^2 \ln(x)\,dx$

d) $\displaystyle \int_1^2 \frac{1}{\sqrt[3]{x-1}}\,dx$

e) $\displaystyle \int_1^{\sqrt{3}} \frac{x^2 + x - 1}{x^3 + x}\,dx$

f) $\displaystyle \int_2^\infty \frac{1}{x\ln(x)\ln(\ln(x))}\,dx$

rules:

1. Work out the problems on separate paper, and transfer your solutions (only) onto this sheet. You do not need to turn in your work.

2. *This will be presentation quality.* Papers with scratch work or large erasures will not be graded.

3. This is due at the beginning of class on Wednesday, October 5th.