

IMPROPER INTEGRALS

BLAKE FARMAN

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Name: _____

Determine whether the following improper integrals converge or diverge.

TYPE I

1. $\int_1^{\infty} \frac{\ln(x)}{x} dx$

2. $\int_1^{\infty} \frac{1}{(2x+1)^3} dx$

3. $\int_{-\infty}^0 e^x dx$

4. $\int_{-\infty}^{\infty} xe^{-x^2} dx$

TYPE II

5. $\int_0^1 \ln(x) \, dx$

6. $\int_0^1 \frac{dx}{\sqrt{x}}$