

MAT 137 (Calculus II) Prof. Swift
In-class worksheet: Improper integrals

1. Write the following improper integral as the sum of the limits of 2 different definite integrals. Do not attempt to evaluate the definite integrals.

$$\int_0^{\infty} \frac{1}{\sqrt{x+x^3}} dx.$$

2. Write the following improper integral as the limit of a definite integral. Then find the value of the improper integral, or show that the improper integral is divergent.

$$\int_0^{\infty} \frac{1}{1+x^2} dx$$