

Improper Integrals

Questions to Answer:

- Converge? How do you know? To what? (*Note:* You might be able to determine convergence even if you don't know what it converges to.)
- Diverge? How do you know?

DoNow

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

2. $\int_1^{\infty} \frac{1}{x^2} dx$

More Examples

3. $\int_1^{\infty} \frac{1}{\sqrt{x}} dx$

4. $\int_1^{\infty} \frac{1}{1+x^2} dx$

5. $\int_0^{\infty} xe^{-x^2} dx$

6. $\int_0^{\infty} e^{-x^2} dx$

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