

Evaluate the improper integral

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

2. $\int_{-\infty}^{-1} \frac{3dx}{3x - x^2}$

3. $\int_{-2}^0 \frac{dx}{(x+1)^{3/5}}$

Evaluate the improper integral

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

2. $\int_3^{\infty} \frac{2dx}{x^2 - 2x}$

3. $\int_0^3 \frac{dx}{(x-1)^{2/3}}$