SECTION 3.7: IMPROPER INTEGRALS (DAY 2)

Compute these integrals with friends! Please carefully write the limit, for example

$$\int_1^\infty \frac{dx}{x^2} = \lim_{t\to\infty} \int_1^t \frac{dx}{x^2} = \lim_{t\to\infty} \left[-\frac{1}{x}\right]_1^t = \lim_{t\to\infty} 1 - \frac{1}{t} = 1$$

1. $\displaystyle\int_2^\infty \frac{1}{9+x^2}\,dx =$

2. $\displaystyle\int_{-\infty}^0 e^x\,dx =$

3. $\displaystyle\int_0^1 \frac{1}{\sqrt[4]{x}}\,dx =$

4. $\displaystyle\int_0^1 \ln t\,dt =$

5. $\displaystyle\int_1^2 \frac{dx}{1-x} =$

6. $\displaystyle\int_0^\infty e^x\, e^{-sx}\, dx =$

7. $\displaystyle\int_0^\pi \tan x\, dx =$

8. $\displaystyle\int_2^\infty \frac{dx}{x \ln^3 x} =$