

Tutorial 7

① Determine whether the following improper integral converges or diverges

(a) $\int_{-\infty}^{\infty} \frac{1}{x^3-1} dx$ (mid term 2021 Q5)

(b) $\int_{-\infty}^0 e^x dx$

(c) $\int_1^{\infty} \frac{\log x}{x^2} dx$

(d) $\int_{-\infty}^{\infty} \sin(x) dx$

(e) $\int_1^{\infty} \sin(x^2) dx$

(f) $\int_0^1 \frac{1}{\sqrt{x}} dx$

(g) $\int_0^1 \frac{1}{\sqrt{x+\sqrt{x}+\sqrt{x}}} dx$

(h) $\int_1^{\infty} \frac{1}{\sqrt{x+\sqrt{x}+\sqrt{x}}} dx$