Math 199 CD3 Merit Worksheet 8: More on Improper Integral

February 17, 2022

Determine if the folowing integral converge or diverge

1.
$$\int_2^\infty \frac{\cos^2 x\,dx}{x^2}$$

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

3.
$$\int_1^\infty \frac{dx}{\sqrt{x^6 + 1}}$$

4.

$$\int_2^\infty \frac{1 + \cos^2 x}{\sqrt{x}(2 - \sin^4(x))} \, dx$$

5.

$$\int_{1/2}^\infty e^{-x^2} \, dx$$

Be careful with this one, there's some interval problem. You may use calculator for some value. If you want to know a cool way to integrate this integral, let me know.