

Use residue to evaluate each improper integral

1.
$$\int_0^{\infty} \frac{x^4}{1+x^6} dx$$

2.
$$\int_0^{\infty} \frac{x \sin x}{4+x^2} dx$$

3.
$$\int_0^{\infty} \frac{\cos x}{(4+x^2)^2} dx$$