Problem statement Consider the following four integrals:

a) $\int_0^\infty \frac{x}{1+x^4} \, dx$ \hspace{4cm} b) $\int_0^\infty \frac{x^2}{1+x^4} \, dx$

c) $\int_0^\infty \frac{x^3}{1+x^4} \, dx$ \hspace{4cm} d) $\int_0^\infty \frac{x^4}{1+x^4} \, dx$

Which of these integrals converge? (Hint: compare to "pure" powers of x.) Compute the exact value of at least one of the convergent integrals.