AM2: Lavoro a casa 1

Integrali impropri

Stabilire se i seguenti integrali sono convergenti ed eventalmente calcolarli.
$I = \int_0^{+\infty} e^{-x} \sin x dx$. $I = \int_0^{+\infty} e^{-2x} \sin x dx$.
$I = \int_0^{+\infty} e^{-x} \sin 2x dx$. $I = \int_0^{+\infty} e^{-2x} \sin 2x dx$.
$I = \int_0^{+\infty} e^{-3x} \sin x dx$. $I = \int_0^{+\infty} e^{-10x} \sin x dx$.
$I = \int_0^{+\infty} e^{-x} \cos x dx$. $I = \int_0^{+\infty} e^{-2x} \cos x dx$.
$I = \int_0^{+\infty} e^{-10x} \cos x dx$. $I = \int_0^{+\infty} e^{-4x} \cos 3x dx$.
$I = \int_0^{1} (\log x) \arctan x dx$ $I = \int_{-1}^{1} (\log x^2) \arctan x dx$
$I = \int_0^{+\infty} e^{-\frac{1}{x^2}} \arctan \frac{1}{x} dx$ $I = \int_{-\infty}^{+\infty} e^{-\frac{1}{x^2}} \arctan \frac{1}{x} dx$
$I = \int_{-\infty}^{+\infty} e^{-\frac{1}{x^2}} \arctan \frac{1}{x^2} dx$ $I = \int_{-1}^{2} (\log x^2) \arctan \frac{1}{x} dx$
$I = \int_{-2}^{1} (\log x^2) \arctan \frac{1}{x} dx$ $I = \int_{-1}^{2} e^{-\frac{1}{x^2}} \arctan \frac{1}{x} dx$
$I = \int_{-2}^{1} e^{-\frac{1}{x^2}} \arctan \frac{1}{x} dx$ $I = \int_0^{+\infty} (\log x) \arctan \frac{1}{x} dx$