

## In class work 5, Spring 2023

Use your own paper to *neatly* write your answers to these questions. This assignment is due Wednesday 12 April.

1. Evaluate each principle value integral.

- 2 (a)  $\int_{-\infty}^{\infty} \frac{1+x^2}{1+x^4} dx$
- 2 (b)  $\int_{-\infty}^{\infty} \frac{1+x^2}{1+x^4} e^{iwx} dx$ , where  $w \in \mathbf{R}_{>0}$ .
- 2 (c)  $\int_{-\infty}^{\infty} \frac{1+x^2}{1+x^4} e^{iwx} dx$ , where  $w \in \mathbf{R}_{>0}$ .