



$$\left\{ \begin{array}{l} \gamma = p/q \\ \gamma \text{ simple poles on } \mathbb{R} \end{array} \right. \quad \bar{\deg} p \leq \bar{\deg} p - 2 \Rightarrow \int_{dx/2\pi}^{\mathbb{R}} \exp(iax)^{x\gamma}$$

$$= i \sum_{\text{Im} z > 0} \text{Res} \exp(iaz)^{z\gamma} + \frac{i}{2} \sum_{\text{Im} z = 0} \text{Res} \exp(iaz)^{z\gamma}$$

$${}^c \bar{\deg} \gamma = -1 \Rightarrow \int_{dz/\pi}^{c+\varepsilon|c-\varepsilon} z^\gamma \rightsquigarrow i \text{Res} \gamma$$

$$\int_{dx/\pi}^{\mathbb{R}_+} \frac{\sin x}{x} \stackrel{\text{ev}}{=} \int_{dx/2\pi}^{\mathbb{R}} \frac{\sin x}{x} = \frac{1}{2}$$

$$\int_{dx/\pi}^{\mathbb{R}_+} \frac{\sin^2 x}{x^2} \stackrel{\text{ev}}{=} \int_{dx/2\pi}^{\mathbb{R}} \frac{\sin^2 x}{x^2} = \frac{1}{2}$$