$$\frac{Ae^{i\theta}}{f - f_0 + i\gamma} \tag{1}$$

Mutltiple by complex conjugate.

$$\frac{Ae^{i\theta}}{f - f_0 + i\gamma} * \frac{(f - f_0)}{(f - f_0)} \tag{2}$$

$$\frac{A}{(f - f_0)^2 + \gamma^2}[(f - f_0)\cos(\theta) + \gamma \sin(\theta) i (f - f_0)] \tag{3}$$