

Examples using:

$$\begin{aligned}\frac{\mathbf{z}_1}{\mathbf{z}_2} &= \frac{x_1 + jy_1}{x_2 + jy_2} = \frac{(x_1 + jy_1)}{(x_2 + jy_2)} \cdot \frac{(x_2 - jy_2)}{(x_2 - jy_2)} \\ &= \frac{(x_1 x_2 + y_1 y_2) + j(x_2 y_1 - x_1 y_2)}{x_2^2 + y_2^2},\end{aligned}$$

$$\frac{5}{2+j3\omega} = \frac{5(2-j3\omega)}{(2+j3\omega)(2-j3\omega)}$$

$$x_1 = 5 \quad y_1 = 0$$

$$x_2 = 2 \quad y_2 = 3\omega$$

$$\frac{10-j15\omega}{4+9\omega^2}$$

$$\frac{6j\omega}{1+j5\omega} = \frac{6j\omega(1-j5\omega)}{(1+j5\omega)(1-j5\omega)}$$

$$x_1 = 0 \quad y_1 = 6\omega$$

$$x_2 = 1 \quad y_2 = 5\omega$$

$$\frac{30\omega^2+j6\omega}{1+25\omega^2}$$