ComplexVariables.sty:
Testing Real and Imaginary commands.

$$\Re(3+2i) = \Im(2+3i) \text{ v.s.}$$
$$\mathrm{Re}(3+2i) = \mathrm{Im}(2+3i)$$

Testing arguments.

$$\mathrm{Arg}(3+3i) = \frac{\pi}{4}$$
$$\arg(z) = \{\mathrm{Arg}(z) + 2\pi k \mid k \in \mathbb{Z}\}$$

Testing ball and punctured ball.

$$z \in B(z_0, R) \iff |z - z_0| < R$$
$$z \in B_*(z_0, R) \iff 0 < |z - z_0| < R$$

Testing Laurent Series.

$$\sum_{n=-\infty}^{\infty} a_n z^n$$
$$\sum_{n=-\infty}^{\infty} a_n (z - z_0)^n$$
$$\sum_{k=-\infty}^{\infty} b_k z^k$$
$$\sum_{k=-\infty}^{\infty} b_k (z - z_0)^k$$
$$\sum_{k=-m}^{\infty} b_k (z - z_0)^k$$

Testing Residuals.

$$\mathrm{Res}\left(\frac{f'}{f}; z_0\right)$$

Testing Various formulas.

$$\text{Cauchy's Formula} : f(a) = \frac{1}{2\pi i} \int_\gamma \frac{f(z)}{z-a} dz$$
$$\text{Cauchy's Extended Formula} : f^{(l)}(a) = \frac{l!}{2\pi i} \int_\gamma \frac{f(z)}{(z-a)^{l+1}} dz$$