Notation

Let $f(z) = f(x+iy) = u(x,y) + iv(x,y)$:

- $f(\bar{z}) = f(x-iy) = u(x,-y) + iv(x,-y)$
- $\overline{f(z)} = u(x,y) - iv(x,y) = \bar{f}(\bar{z})$
- $\bar{f}(z) = u(x,-y) - iv(x,-y) = \overline{f(\bar{z})}$

Example

$f(z) = iz^3$

$f(\bar{z}) = i\bar{z}^3$

$\overline{f(z)} = \overline{iz^3} = \bar{i}\,\overline{z^3} = -i\bar{z}^3$

$\bar{f}(z) = \overline{f(\bar{z})} = \overline{i\bar{z}^3} = -iz^3$