Cauchy Formula
$$f(rz) = \frac{1}{2\pi} \int_0^{2\pi} \frac{e^{it}}{e^{it}-z} f(re^{it}) \, dt$$

$+$

Cauchy - Goursat Formula
$$0 = \frac{1}{2\pi} \int_0^{2\pi} \frac{\bar{z}}{1 - \bar{z} e^{it}} f(re^{it}) \, dt$$

Poisson Formula Analytic Scaled
$$f(rz) = \frac{1}{2\pi} \int_0^{2\pi} \frac{1-|z|^2}{|e^{it}-z|^2} f(re^{it}) \, dt$$

$\xrightarrow{\quad r \nearrow 1 \quad}$

Poisson Formula Analytic
$$f(z) = \frac{1}{2\pi} \int_0^{2\pi} Re\left(\frac{e^{it}+z}{e^{it}-z}\right) f(e^{it}) \, dt$$

$\Downarrow$ harmonic - is real Of - Holomorphic

Poisson Formula Harmonic Scaled
$$u(rz) = \frac{1}{2\pi} \int_0^{2\pi} \frac{1-|z|^2}{|e^{it}-z|^2} u(re^{it}) \, dt$$

$\Downarrow$ $r \nearrow 1$, Dominated Conv.

Poisson Formula Harmonic
$$u(z) = \frac{1}{2\pi} \int_0^{2\pi} \frac{1-|z|^2}{|e^{it}-z|^2} u(e^{it}) \, dt$$