

### Cauchy's Integral Formual

Let  $f$  be analytic in a simply connected domain  $D$ , and let  $C$  be a simple closed contour lying entirely within  $D$ . If  $z_0$  is any point within  $C$ , then

$$f(z_0) = \frac{1}{2\pi i} \oint_C \frac{f(z)}{z - z_0} dz.$$