Math 4200-001
Week 7 concepts and homework
2.4
Due Wednesday October 16 at start of class.

2.4 2, 4, 13.

w7.1 Prove the special case of the Cauchy integral formula that we discuss in Friday's notes:

If $\gamma$ is a counter-clockwise simple closed curve bounding a subdomain $B$ in $A$, with $z_0$ inside $\gamma$, then the important special case of the Cauchy integral formula can be proven with contour replacement and a limiting argument, assuming $f$ is $C^1$ in addition to being analytic:

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