1. Let $\Gamma$ be a simple closed contour and let $f(z)$ be analytic inside and on $\Gamma$. Let $z_0$ be inside of $\Gamma$. Give the variant of the Cauchy Integral Formula for the $n$-th derivative of $f(z)$ at $z = z_0$.

$$f^{(n)}(z_0) =$$

2. Let $\Gamma$ be a contour and let $f(z)$ be continuous on $\Gamma$ and satisfy $|f(z)| \leq M$ on $\Gamma$. Then give an estimate on $\left| \int_{\Gamma} f(z) \, dz \right|$ in terms of $M$ and $\text{length}(\Gamma)$.

$$\left| \int_{\Gamma} f(z) \, dz \right| \leq$$