MATH 365 Quiz 3 **Name:**

Show all work. 5 points each.

1. Evaluate $\oint_C \frac{e^{iz}}{z^3} dz$ where C is the circle $|z| = 2$.

2. Use the Gauss Mean value theorem to evaluate $\frac{1}{2\pi} \int_0^{2\pi} e^{(e^{it})} dt$.

(2pts extra credit) Use this (not Maple) to evaluate. Justify.

$\int_0^{2\pi} e^{\cos(t)} \cos(\sin(t)) dt =$

$\int_0^{2\pi} e^{\cos(t)} \sin(\sin(t)) dt =$