MATH 261 Quiz 14 Name: .
Student number:

Show all work. 5 points each.

1. Use Stokes Theorem to evaluate $\int_C \mathbf{F}\cdot d\mathbf{r}$ where C is the triangle with vertices (1, 0, 0), (0, 1, 0), and (0, 0, 1) oriented counterclockwise and $\mathbf{F}(x, y, z) = \langle x + y^2, y + z^2, z + x^2\rangle$.

2. Use the Divergence Theorem to calculate the surface integral $\iint_S \mathbf{F}\cdot d\mathbf{S}$ when $\mathbf{F}(x, y, z) = \langle x, z, y\rangle$ and S is the surface of the box with vertices $(\pm 1, \pm 2, \pm 2)$.