| Fall 2020 | ENG 5300 | Quiz 3 | Jin Xue |

You must show **all** work to receive full credit. All work is to be your own.   October 12

This is a closed books and notes test. Be organized.   Total points: **40**   19:35-20:05

1. §10.6 Flux Integrals (3) $\iint\limits_{S} \mathbf{F} \cdot \mathbf{n} \, dA$ Evaluate the integral for the given data. Describe the kind of surface. Show the details of your work.   20 points

   $\mathbf{F} = [e^y, \ e^x, \ 1], \quad S : x + y + z = 1, \ x \geq 0, \ y \geq 0, \ z \geq 0$

Evaluate the integral by the Divergence Theorem. (Show the details.)
$\mathbf{F} = [z - y \, , \, y^3 \, , \, 2z^3], \quad S$ the surface of $y^2 + z^2 \leq 4, \, -3 \leq x \leq 3$