

Math 3298 Worksheet 30: Surface integrals

Group members (2 to 4): \_\_\_\_\_

- (1) Find the average value of  $z^2$  on the portion  $S$  of the plane  $x + y + z = 6$  inside the cylinder  $x^2 + y^2 = 4$ . Compute the average as the ratio of the scalar surface integral  $\int \int_S z^2 dS$  to the surface area  $\int \int_S dS$ .