

## Surface Integrals

1. Setup an integral to find the surface area of the part of the paraboloid  $z = x^2 + y^2$  which is inside the cylinder  $x^2 + y^2 = 9$ .

2. Evaluate

$$\int_S z \, dS$$

where  $S$  is the surface  $x = y + 2z^2$ ,  $0 \leq y \leq 1$ ,  $0 \leq z \leq 1$ .