

Name: \_\_\_\_\_

- No electronic devices are allowed. You must show your work to obtain credit.
  - You may use the back if necessary. Please indicate clearly if you do so.
1. (5 points) Find the area of the part of the plane  $2x - 2y + z = 6$  that lies in the cylinder  $x^2 + y^2 = 9$ .

2. (5 points) Evaluate the surface integral  $\iint_S \mathbf{F} \cdot d\mathbf{S}$ , where  $\mathbf{F}(x, y, z) = \langle 0, x, y \rangle$ , and  $S$  is the hemisphere  $x^2 + y^2 + z^2 = 1$ ,  $y \geq 0$ , oriented in the direction of the positive  $y$ -axis.