

HOMEWORK 54

Find the areas of these surfaces.

1. $\Sigma = \{(x, y, z) \mid z = x^2 + y^2 \text{ and } 0 \leq x \leq 1 \text{ and } 0 \leq y \leq 2\}$.
2. $\Sigma = \{(x, y, z) \mid r = 2 + \cos t \text{ and } z = \sin t \text{ and } 0 \leq t \leq 2\pi\}$.
(Hint: use $x = r \cos \theta$, $y = r \sin \theta$, $0 \leq \theta \leq 2\pi$.)