1. Evaluate \( \int \int_{R} \cos(x + 2y) \, dA \) where \( R = \{(x, y) | 0 \leq x \leq \pi \text{ and } 0 \leq y \leq \pi/2\} \)

2. Set up a double integral to find volume of the solid bounded by the cylinder \( x^2 + y^2 = 4 \) and the planes \( y + z = 4 \) and \( z = 0 \).
1. Evaluate \( \int_0^2 \int_{y/2}^1 \cos(x^2) \, dx \, dy \)

2. Set up a double integral to find volume of the solid that lies in the first octant and is bounded by three coordinate planes and the cylinders \( x^2 + y^2 = 4 \) and \( y^2 + z^2 = 4 \)