12.1, number 5: **Give a geometric description of the set of points in 3-space which satisfy $x^2 + y^2 = 4$ and $z = 0$.**

Answer: The set of points in 3-space that satisfy $x^2 + y^2 = 4$ and $z = 0$ is the circle of radius 2 with center at the origin in the xy-plane.

the answer is this circle