Please PRINT your name _____

No calculators, cell phones, computers, notes, etc.

Circle your answer. Make your work correct, complete, and coherent.
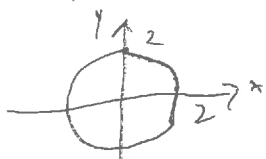
The quiz is worth 5 points. The solutions will be posted on my website later today.
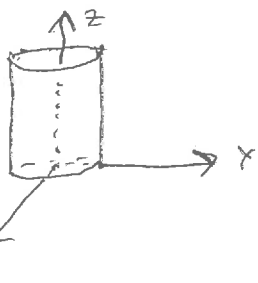
Quiz 1, January 15, 2020

Give a geometric description of the set of points in 3-space whose coordinates satisfy both of the equations

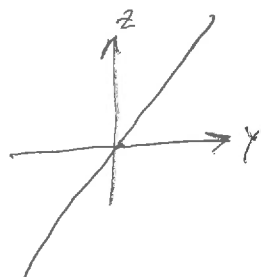$$x^2 + y^2 = 4 \quad \text{and} \quad z = y.$$

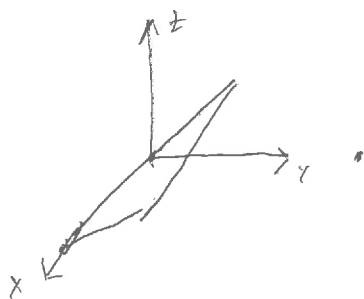In the xy plane $x^2 + y^2 = 4$ is a circle:

In 3-space $x^2 + y^2 = 4$ is a cylinder. (One draws the same circle for each z.)

In the yz plane $z = y$ is a line

In 3-space $z = y$ is a plane. (One draws the same line for each x.)

The points the satisfy both $x^2 + y^2 = 4$ and $y = z$ in 3-space are the intersection of the cylinder and the plane. This intersection is an ellipse.