**ADDITIONAL PROBLEMS**

**Problem 1.** What do you get when you cut a projective plane in half, as shown below in (a)?

![Diagram of a projective plane cut in half](image)

**Problem 2.** What do you get when you cut a projective plane along the two loops $\alpha$ and $\beta$ as shown above in (b)?

**Problem 3.** Slice the space model of the Klein bottle, as drawn below, along the vertical plane that splits it into two symmetric halves. What are the two pieces obtained?

![Diagram of a Klein bottle](image)

**Problem 4.** What do you get when you cut a Klein bottle along each of the two loops $\alpha$ and $\beta$ as shown above?