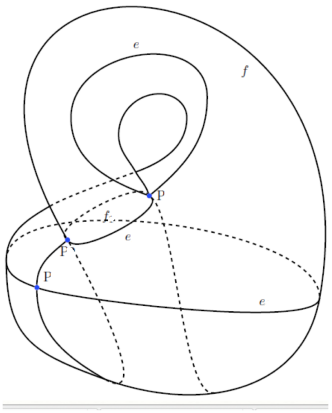
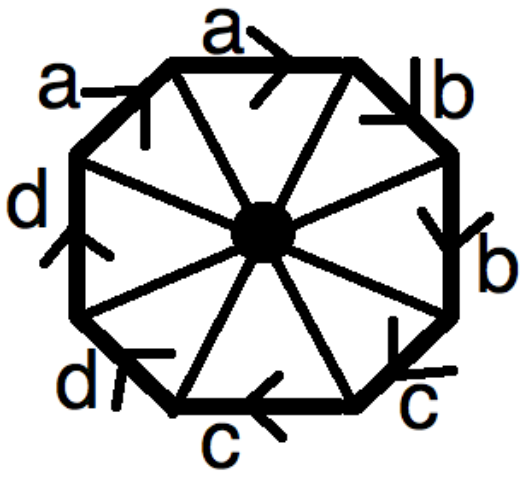
Homework #6

1. [9] Angle sum worksheet. (Please turn in only one copy per group!)
2. [3] Recall that $\mathbb{T}^2\#\mathbb{P}^2$ is topologically equivalent to $\mathbb{K}^2\#\mathbb{P}^2$.
   (a) Does this mean that $\mathbb{T}^2$ is topologically equivalent to $\mathbb{K}^2$? Justify your answer.

   (b) Find another surface that can be written in two different ways where one makes use of $\mathbb{T}^2$ and the other makes use of $\mathbb{K}^2$.

3. [4] For each surface below:
   (a) Identify the object using the connect sum of only S^2's, $\mathbb{T}^2$'s, and $\mathbb{P}^2$'s.
   (b) Compute its Euler number χ.





4. [4] For each of the following surfaces described:
   (a) write the object using the connect sum of only S^2's, $\mathbb{T}^2$'s, and $\mathbb{P}^2$'s.
   (b) identify the object from the two lists on page 80.

   (a) $\mathbb{P}^2\#\mathbb{K}^2\#S^2$

   (b) $\mathbb{K}^2\#\mathbb{T}^2$