

Homework #5

1. [4] Order the following from greatest area to least. Explain your reasoning.
 - (a) a circle with radius 2 in \mathbb{E}^2
 - (b) a circle with radius 1 in S^2
 - (c) a circle with radius 2 in \mathbb{H}^2
2. [2] Do exercise 9.7 on page 147 of Week's The Shape of Space text.
3. [4] For each set of angle measures, determine what geometry is needed in order for them to form a triangle.
 - (a) $\frac{\pi}{2}$, $\frac{\pi}{6}$, and $\frac{\pi}{3}$
 - (b) $\frac{\pi}{6}$, $\frac{\pi}{8}$, and $\frac{\pi}{12}$
4. [3] Find the area of a triangle whose angles are 90° , 120° , and 45° .
5. [7] Make or extend the hyperbolic plane started in class so that there are at least 15 vertices with seven triangles around them.