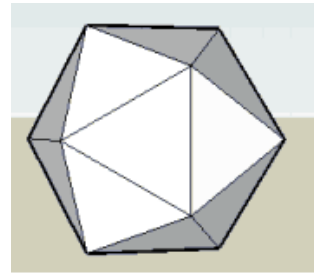


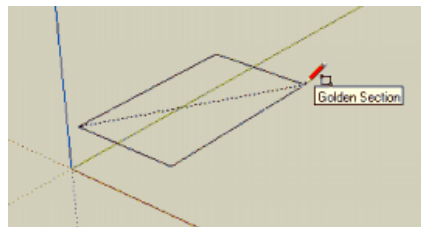
For this assignment, you're going to construct an icosahedron.



To construct the Icosahedron:

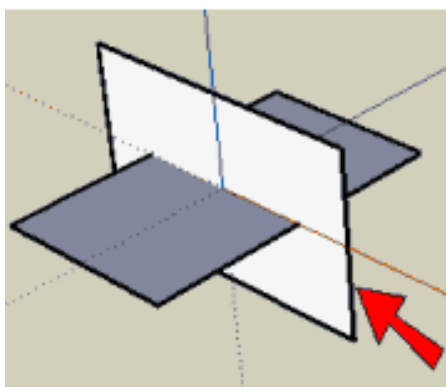
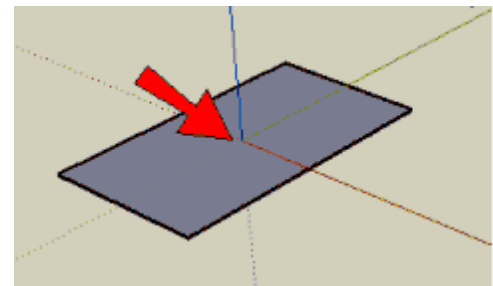
Part 1: Construct the golden rectangle skeleton

1. Use the Rectangle tool to draw a golden section on the ground (red-green plane).



2. Center your rectangle at the origin. To do this, identify the center using inferencing and the Line tool (you can draw two diagonals on the face of the rectangle to do this).

- Then use the Move tool to place the center of your rectangle at the origin.
- Erase the lines that you created on the face of rectangle to identify the center.
- Make your rectangle a group by selecting the enter object, right clicking and selecting "Make Group".



2. Rotate the rectangle 90°, pressing the ALT key to copy it as you do.

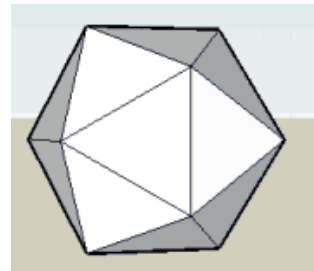
Rotate your new rectangle 90° along its edge so that your two rectangles are orthogonal (fancy

word for “perpendicular) to one another.

Platonic Solids – Construct the Icosahedron

Name(s): _____

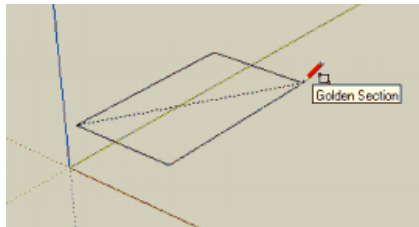
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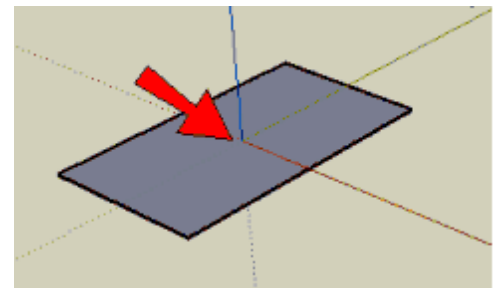
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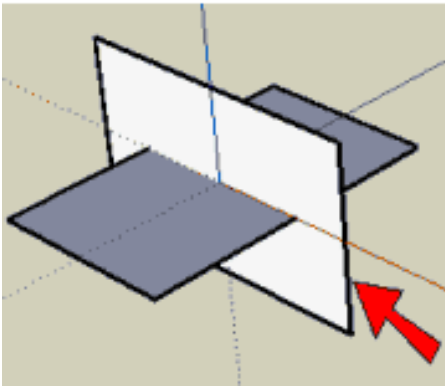
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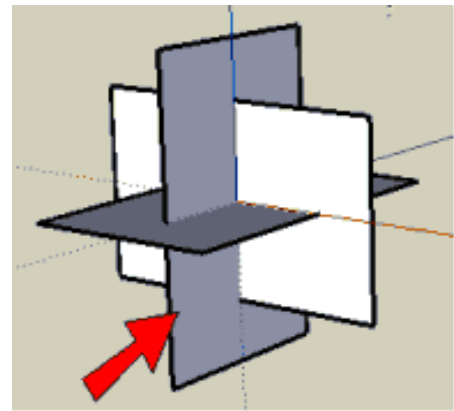


2. Rotate the rectangle 90°, pressing the ALT key to copy it as you do.

Rotate your new rectangle 90° along its edge so that your two rectangles are orthogonal (fancy word for

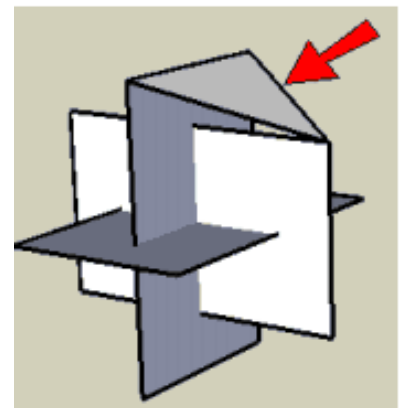
“perpendicular) to one another.

3. Repeat the last step in the other direction. Now you should have three golden rectangles that are all centered at the origin and orthogonal to one another.



Part 2: Connect the vertex of each golden rectangle to each vertex adjacent to it.

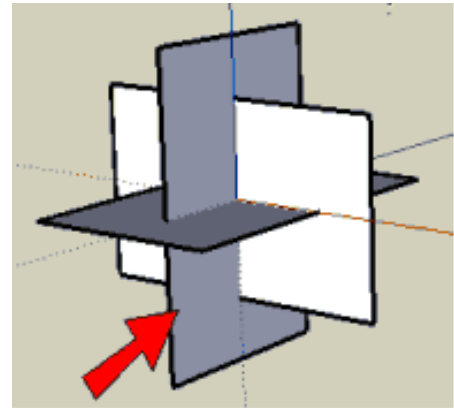
4. Use Line to connect a corner point of one rectangle to the two corners of the edge closest to it. This makes your first triangle, which is equilateral (all sides equal).



5. Create the rest of the icosahedron in the same way. You will have 20 triangles when your all done. You did it! Congratulations!

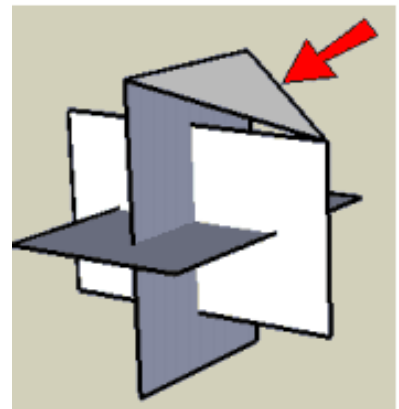
When you're done, save as <Name>_<Name>SketchUp icosahedron Construction_r1_vA and submit it via the Google form at model.nychscl.org

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