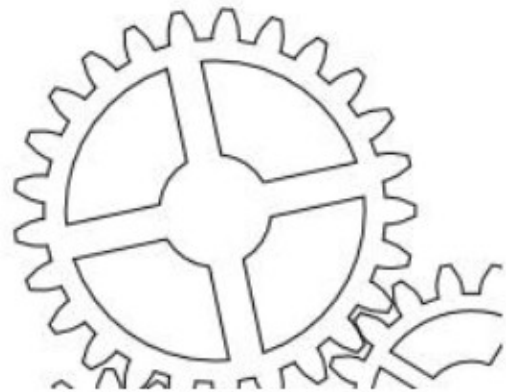
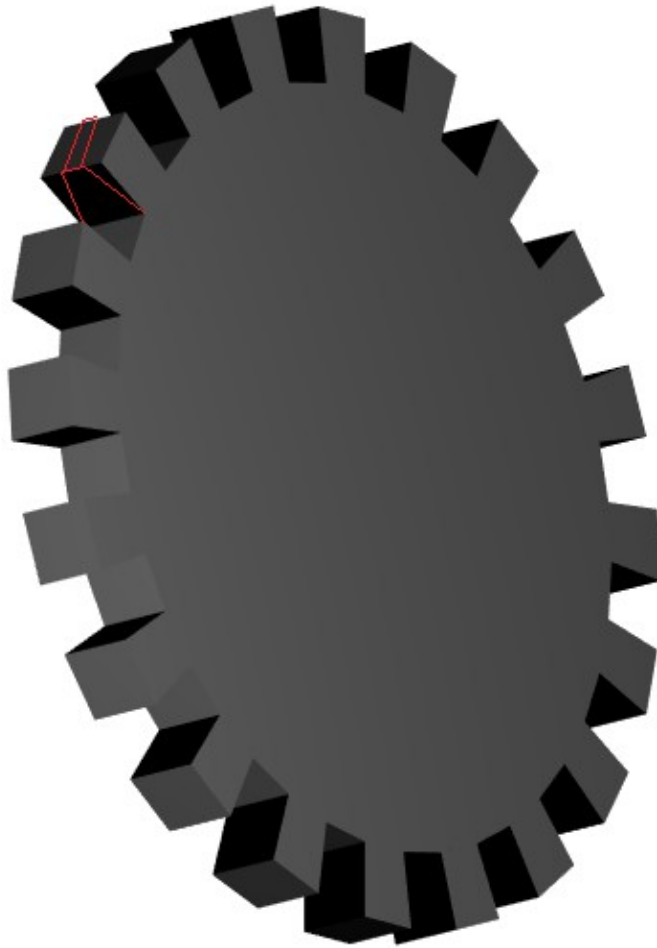


Due: by midnight Friday March 1 ( or with 10% late penalty, by midnight Saturday March 2)



Starting with the WebGL gear program developed in class (download the zip from canvas), make three modifications:

1. Change the teeth so that the sides slant inward toward each other (shown by red lines in OpenGL image and in the photo) The exact angle is up to you, but the slanting should be unmistakable.
2. Add spokes to the interior of the gear. Any 3D shape is fine. There should be empty space between them!
3. Make your gear look metallic (silver, gold, copper). Choose your own color(s) and implement specular light.

Your gear should be centered at the origin and roughly fit inside the  $-1 < x < 1$ ,  $-1 < y < 1$ ,  $-1 < z < 1$  cube. It should be produced by a javascript function that takes the following parameters:

`smithGear( numTeeth, numSpokes, .....`

It should return a list of 3 lists: a list of vertices, a list of vertex colors, and a list of vertex normals.

You may add additional parameters, e.g. inner radius, outer radius (which you should document).

Your function should be in a self-contained file (as it is in the starter code), it should include your name as part of the function name (in place of "smith"). If we share the gear-making functions for the final assignment, other students should be able to use your gear simply by adding your javascript file and calling your function. Your WebGL program should allow the user to interactively rotate the gear just as he can in the starting code. Submit a zip of your entire WebGL project, including the folder. The grader should be able to run your program by opening the html file in Chrome. I encourage you to make a more complex or more interesting gear, but be sure to meet the basic requirements as well.

Along with your source code, you should turn in two screen captures of your gear, showing it from two different interesting angles. Include these images in the zip file mentioned above.