

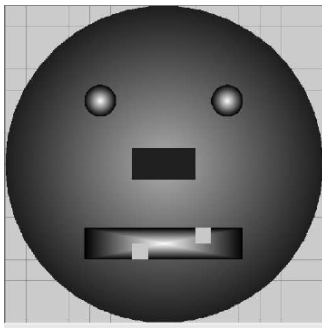
CSS450: Assignment 5 Question Sheet [This assignment carries twice the weight]

Instructions:

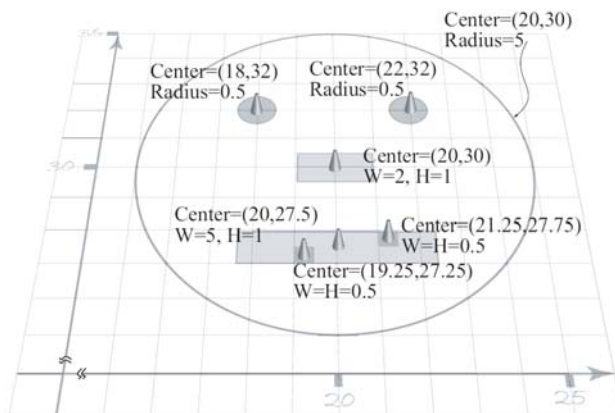
- In questions where you are asked to explain, please be concise.
- Show your work when necessary, be neat, precise, and brief!
- To help us grade your assignments and return this to you in a timely fashion please:
 - Put your name and answers in the answer sheet only (separate link provided). Anything you write outside of the answer sheet **will not** be graded.
 - Provide your answers in the order of the problems.
 - Please use only one side of 8.5x11 paper.
 - Please make sure you bring a hardcopy print out **of the answer sheet (!!only!!)** to submit at the beginning of class. Please do not print out the problems.

Your assignment may not be graded if any of the above is violated, you have been warned.

The following questions are based on the system we have developed thus far. This is my attempt at drawing my face:



Notice that, my face is made of three circles (one for face outline and two for my eyes), and four squares (one for my nose, one for my mouth, and two for the two teeth left). Here is my design (the “cones” in the drawing are meant to identify the center position of the corresponding shapes):



To admire myself, I define two cameras:

- Main:
 - WC Center: (20, 29) Width=6
 - Viewport: (20, 40, 600, 400)
- Hero:
 - WC Center: (23, 31) Width= 4
 - Viewport: (0, 0, 40, 40)

1. For the Main Camera

- a. What is the height of the WC Window?
- b. For all the pixels you can see in the Viewport, how many of them belong to the circle that represents the outline of my face? NOTE: another way of asking this question is, how many of the pixels are **NOT** covered by one or multiple rectangles.
- c. What is the WC position that corresponds to Viewport Coordinate of (120, 240)?
- d. What is the Viewport Coordinate of WC position (22, 30)?

2. For the Hero Camera

- a. What is the WC position that corresponds to Viewport Coordinate of (30, 20)
- b. What is the Viewport Coordinate of WC position (22, 30)?

3. What are the WC positions when I click my mouse at:

- a. Canvas Coordinate position (60, 30)?
- b. Canvas Coordinate position (20, 30)?
- c. Canvas Coordinate position (220, 30)?
- d. Canvas Coordinate position (320, 440)?