

# CSC 473

## Unit Tests 1 – EXAMPLE rays only for preparation – exact rays for unit testing may vary

Due: Thursday, April 7<sup>th</sup>, 2016

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### Overview

Through out the quarter lab assignments will consist of validation of your ray tracer code. This validation will be established via demonstrating your ray tracer's return values for specific rays. In general, this will require that for a specific ray (relative to the camera – i.e. listed in pixel space, e.g. [Xi, Yi]), can be tested – for example, having various values returned throughout the ray tracing process. This will include values such as the ray's point, and direction, distance to closest object, color of intersected object, and then later derived ray's from the original ray.

### Goal:

For this lab, we will be focusing validation on ray – sphere and ray – plane intersections.

You should work with three different files:

simple.pov

planes.pov

spheres.pov

For all files assume you are rendering a window 640 by 480

Demo the position and direction of the following rays (specified in pixel space):

- 1) {320, 240}
- 2) {170, 120}
- 3) {490, 120}
- 4) {170, 360}
- 5) {490, 360}

Now for spheres.pov and planes.pov demo the distance returned and the color for the specified rays:

- 1) {320, 240}
- 2) {170, 120}
- 3) {490, 120}
- 4) {170, 360}
- 5) {490, 360}