**Objectives: CS200 A5 (Worth 100 points)**

**Name: Hwang Chan IL\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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# Student ID: 5415279\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_**v**\_1: Correct information was handed in. If not, penalty is -**20** points.

\_ **v**\_2: Student program compiles, links and executes. If not, penalty is -**100** points.

\_v\_3: Filled circular pillars, filled polygonal pillars, BC boundaries, and AABB boundaries are rendered correctly. If not, penalty is -**20** points.

\_**v**\_4: Create selection of Mode menu discards clockwise triangles. Worth **5** points.

\_**v**\_5: Create selection of Mode menu discards concave polygons. Worth **5** points.

\_v\_6: BCs and AABBs are constructed with the tightest fit possible out of all the methods discussed in class. Worth **10** points.

\_**v**\_7: Object picker is implemented correctly for circular pillars: Worth **5** points.

\_v\_8: Object picker is implemented correctly for polygonal pillars using hierarchical tests starting with enclosing BC, enclosing AABB, and ending with inside-outside tests with polygon edges. Worth **15** points.

\_**v**\_9: Object picker allows users to reposition picked pillar by dragging the mouse. For robust simulations, a pillar cannot be allowed to straddle other pillars, contain other pillars, or be contained by other pillars. Worth **50** points.

\_v\_a) Intersection between circular pillars (or, BCs). Worth **5** points.

\_v\_b) Intersection between circular pillar (or, BC) and rectangular pillar (or, AABB). Worth **10** points.

\_v\_c) Intersection between rectangular pillars (or, AABBs). Worth **5** points.

\_v\_d) Intersection between circular pillar (or, BC) and polygonal object. Worth **15** points.

\_v\_e) Intersection between rectangular pillar (or, AABB) and polygonal pillar and intersection between polygonal pillars. Worth **15** points.

\_v\_10: A good manual page was submitted. Worth **10** points.

**DECLARATION: Hwang Chan Il**

I have read the statements regarding cheating in both the CS200 course handout and DigiPen student handbook. I affirm with my signature that this is my own solution to A5 and the submitted source code and manual are of my creation and represent my own work.

**Signature: Hwang Chan Il**