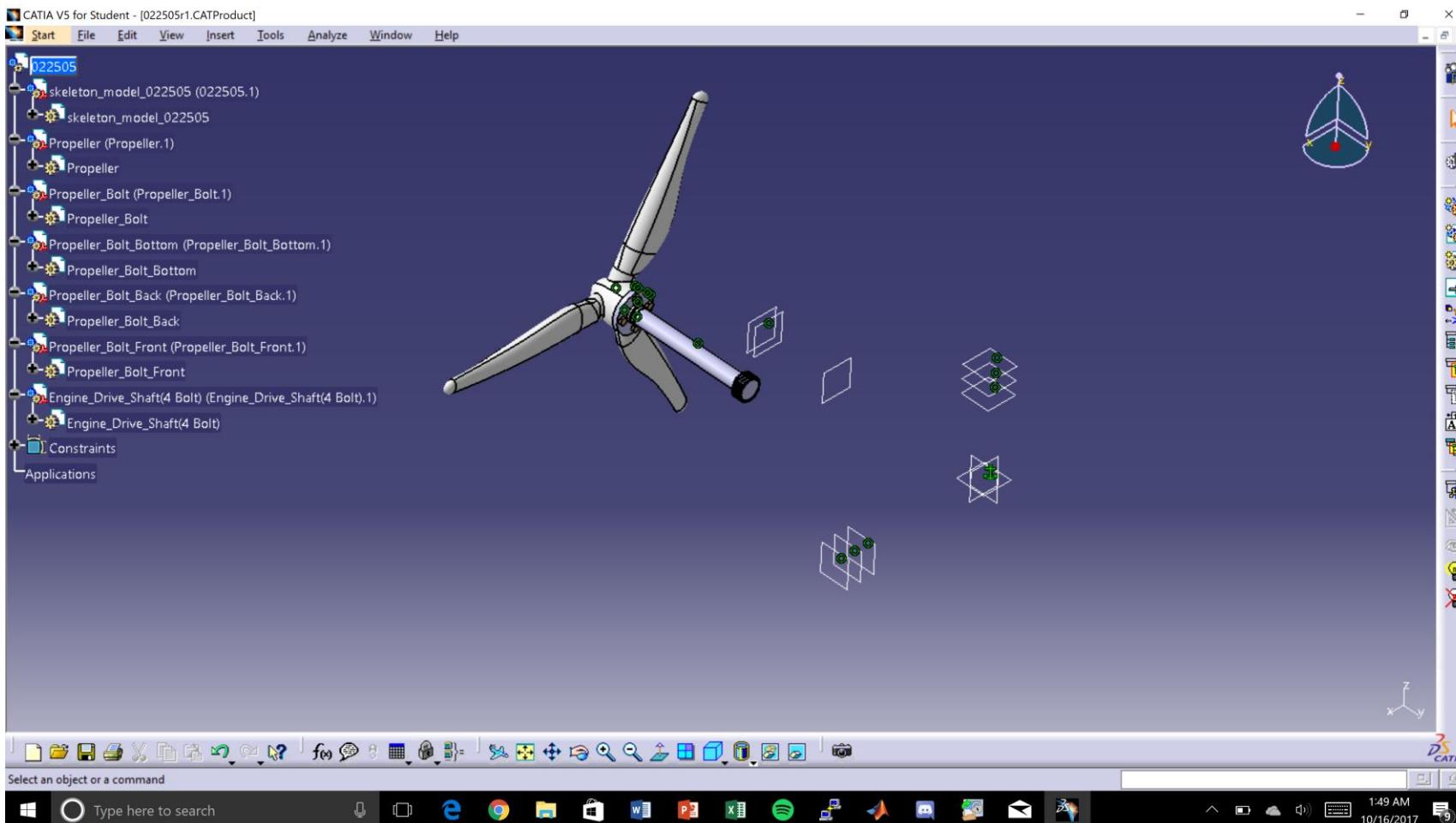


CGT 163 – GRAPHICAL COMMUNICATION & SPATIAL ANALYSIS

MATTHEW BOLDA



GENERAL INFORMATION

CGT 163 Graphical Communication & Spatial Analysis
Syllabus
Fall 2017



*"As a boilermaker pursuing academic excellence, I pledge to be honest and true in all
that I do. Accountable together - we are Purdue."*

Course Director

Professor Craig L. Miller, Ph. D. – miller02@purdue.edu

Instructor Office Hours

	Monday	Tuesday	Wednesday	Thursday	Friday
7:30					
8:30	Prof. Miller KNOY 337		Prof. Miller KNOY 337		
9:30	Prof. Miller KNOY 337	Qianlian Zheng KNOY 335	Prof. Miller KNOY 337		
10:30	Ge Gao KNOY 335	Qianlian Zheng KNOY 335	Alex Ruffino KNOY 335	Hui Tang KNOY 335	
11:30	Ge Gao KNOY 335	Ge Gao KNOY 335	Jin Suh Park KNOY 335	Hui Tang KNOY 335	
12:30	Zheng Zhou KNOY 335	Ge Gao KNOY 335	Jessica Balfie KNOY 335		Robert Jezior KNOY 335
1:30	Zheng Zhou KNOY 335	Mukul Sawant KNOY 335	Robert Jezior KNOY 335		Robert Jezior KNOY 335
2:30	Zheng Zhou KNOY 335	Jessica Balfie KNOY 335	Robert Jezior KNOY 335		
3:30	Zheng Zhou KNOY 335		Adityanarayanan Samant KNOY 335		
4:30			Adityanarayanan Samant KNOY 335		
5:30					

Course Description

CGT 163 is an introductory course in computer graphics applications for mechanical and aeronautical related professions. Experiences focus on visualization, sketching, graphic standards and problem-solving strategies for engineering design. The course will emphasize the proper use of parametric solid modeling for design intent.

Course Objectives

1. Describe the importance of engineering/technical graphics in the design of made products. (foundational applied understanding)
2. To advance your spatial abilities that would allow you to successfully communicate engineering ideas using visual techniques. (foundational applied understanding)
3. Utilize two and three-dimensional geometry for engineering and technical applications. (foundation)
4. Apply basic industry graphics standards to engineering design. (operationalize)
5. Sketch basic freehand representations of technical concepts. (operationalize)
6. Demonstrate proficiency using basic 3D computer-aided design (CAD) processes. (operationalize)

Textbooks

- *Applied Geometry for Engineering Design*, Miller, C.L. (2011) 1st Edition
<http://www.eacademicbooks.com/BookDetail.asp?product=CGT%20163>

Grading

Activity	Percentages	Grading Scale	Grade*
Assignments	050%	92	A
Quizzes	015%	89	A-
Final Project	025%	87	B+
Portfolio	010%	82	B
Total	100%	79	B-
		77	C+
		72	C
		69	C-
		67	D+
		62	D
		59	D-
		00	F

- Regardless of the above percentages, **any student who fails to submit by the posted deadlines 13 or more assignments will receive a failure (F) for the course.**
- Regardless of the above percentages, **any student who fails to submit by the posted deadlines 4 or more of the laboratory preparations lecture notes (4 or more late or missed notes from laboratory preparation lectures on Monday) will receive a failure (F) for the course.**
- **All email correspondence has the following requirements:**
 - The email subject line must be as follows:
 - CGT 163 - XX (XX = lab#). If this requirement is not met the email will be trashed without being read.
 - Any email that you send that asks a question that the information in your question can be found in the CGT 163 syllabus will result in ten (10) deduction from your assignment points. Please read the syllabus before asking a question that you already have the answer for!

Laboratory Preparation & Theory Lecture Expectations

- You are expected to attend all Laboratory Preparation & Theory Lectures.
- No electronic devices (laptops, mobile phones, handhelds, etc.) are permitted to be used in lecture, unless specifically allowed by the course supervisor. A 50-assignment-point penalty will be accessed per occurrence.
- Sleeping is not permitted in lecture. A 50-assignment-point penalty will be accessed per occurrence.

Assignments

- CGT 163 assignments include freehand sketching, CAD, and others.
- Every assignment (both CAD and sketching) will have a corresponding naming convention to assist in quick return of graded materials. The naming convention, demonstrated below, will also correspond to the filename of any saved CAD homework.

002309 00 Section number corresponding to your class schedule
23 Your assignment number
09 Assigned seat number in your laboratory

- Assignments are due at the beginning of the next laboratory session. Sketch assignments will be collected at the beginning of the next laboratory session. CAD assignments should be submitted to [Blackboard Learn](#) before the beginning of the next laboratory session and will be graded by laboratory instructor in lab.
- **Late assignments will NOT be accepted (five minutes (5) after the beginning of labs), unless prior arrangements are made with your instructor.**
- **No assignment due in the labs can be made up for receiving credit unless you hold a valid reason for absence and prior arrangements are made with your instructor.**
- Lecture assignments including Laboratory Preparation Lecture Notes and Theory Lecture Notes will be due and collected at the end of each corresponding lecture.
- **No lecture assignment can be made up for receiving credit unless you hold a valid reason for absence and prior arrangements are made with your instructor.**
- **You must be present in laboratory to receive credit for laboratory assignments.** This is when the most assignments are graded and performance feedback is individually given. **Even if you make the submission deadline on Blackboard Learn you still must come to laboratory to receive credit for the assignments.**
- Having someone else turn in any assignment(s) for you so that you do not attend a lecture, laboratory preparation, or laboratory will result in a grade of zero being assigned to all assignments that are due.
- If you do not agree with the grade that you received from your laboratory instructor the course director will re-grade your work and you will be assigned the new grade from the re-grade of your work by the course director.
- Any questions regarding the grade assigned on an assignment or a test must be directed to your laboratory instructor or the course director within **two weeks** of the assignment deadline date or the date of the test administration.

Lecture and Laboratory Attendance

- You are expected to attend all CGT 163 lectures and your own laboratory sessions.
- You are being allowed for five minutes (5) late for laboratory sessions. If you are not able to arrive at the lab room due to time conflict on a regular basis, you need to make arrangement with your laboratory instructor.
- **Being absent for any lecture or laboratory session WITHOUT a valid reason will result in zero point for any lecture notes or assignments due in that lecture or lab.**
- If you must miss a lecture, laboratory preparation, or laboratory WITH a valid reason (attending conference, job interview, military leave, etc.), you need to contact your instructor **PRIOR** to your lecture, laboratory preparation, or laboratory **in a timely fashion** and make any necessary arrangements.

- If you are ill and cannot attend your lecture, laboratory preparation, or laboratory then you need to contact your instructor **via email the same day** for any consideration of a deadline extension.

Academic Honesty

Students are encouraged to work together but **each student is required to do their own work**. Standards set by Purdue University as outlined in the Student Handbook and the University Regulations (current edition) will be observed in this course. Any student found participating in cheating, plagiarism, copying material from another person's disk, using illegal cribs or other materials forbidden during a written or practical examination, lying to course instructors and/or lab assistants about his/her work, stealing tests, quizzes, or answer keys, or any such like activities will be considered in conflict with the printed academic honesty guidelines as set out by Purdue University, Purdue Polytechnic Institute, and Department of Computer Graphics Technology. All matters that arise in regards to students being found to be in conflict with these guidelines will be reported to the Office of the Dean of Students, and the appropriate Purdue University administration officers, for consideration and possible disciplinary action. **Specifically, any student caught cheating in CGT 163 will receive an "F" for the course grade.** Incidents of academic misconduct in this course will be addressed by the course instructor and referred to the Office of Student Rights and Responsibilities (OSRR) for review at the university level. In addition, all incidents of academic misconduct will be forwarded to OSRR, where university penalties, including removal from the university, may be considered. Students may refer to the [Purdue University Student Conduct Policy](#).

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breeches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern.

Counseling and Psychological Services (CAPS) Information

Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at (765) 494-6995 and <http://www.purdue.edu/caps/> during and after hours, on weekends and holidays, or through its counselors physically located in the Purdue University Student Health Center (PUSH) during business hours.

EMERGENCY NOTIFICATION PROCEDURES are based on a simple concept – if you hear a fire alarm inside, proceed outside. If you hear a siren outside, proceed inside.

- **Indoor Fire Alarms** mean to stop class or research and immediately **evacuate** the building. Proceed to your Emergency Assembly Area away from building doors. **Remain outside** until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave.
- **All Hazards Outdoor Emergency Warning Sirens** mean to immediately seek shelter (**Shelter in Place**) in a safe location within the closest building. o "Shelter in place" means seeking immediate shelter inside a building or University residence. This course of action may need to be taken during a tornado, a civil disturbance including a shooting or release of hazardous materials in the outside air. Once safely inside, find out more

details about the emergency*. **Remain in place** until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave.

*In both cases, you should seek additional clarifying information by all means possible...Purdue Home page, email alert, TV, radio, etc...review the Purdue Emergency Warning Notification System multi-communication layers at
http://www.purdue.edu/ehps/emergency_preparedness/warning-system.html

Emergency Response Procedures

Review the **Emergency Procedures Guidelines**

https://www.purdue.edu/emergency_preparedness/flipchart/index.html

- Review the **Building Emergency Plan** (available from the building deputy) for:
 - evacuation routes, exit points, and emergency assembly area,
 - when and how to evacuate the building,
 - shelter in place procedures and locations,
 - additional building specific procedures and requirements.

EMERGENCY PREPAREDNESS AWARENESS VIDEOS

"Shots Fired on Campus: When Lightning Strikes," is a 20-minute active shooter awareness video that illustrates what to look for and how to prepare and react to this type of incident. See: <http://www.purdue.edu/securePurdue/news/2010/emergency-preparedness-shots-fired-on-campus-video.cfm> (Link is also located on the EP website)

MORE INFORMATION

Reference the Emergency Preparedness web site for additional information:

http://www.purdue.edu/emergency_preparedness

Intellectual Property (IP)

For concerns about IP, including IP resulting from student participation in course assignments, see Purdue University's [Policy VIII.4.1, Intellectual Property](#)

Minor

An engineering/technical graphics minor focused on product lifecycle management (PLM) is available from The Department of Computer Graphics Technology.

Acknowledgement of Course Policies

As a boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue. I have read and understood all aspects of the CGT 163 syllabus and my expectations to be successful in CGT 163 and agree to adhere to them.

Last & First Names
(Printed in ink)

Signature
(Signed in ink)

Date

Assignment #

Portfolio

The outcome of this requirement is a digital portfolio of your engineering/technical graphics work to use for internship, co-op, and permanent professional positions. The goal is to allow you to show possible employers actual engineering/technical graphics experience using both freehand sketching and CAD technologies.

Initial Digital Portfolio Requirements

The following is required to receive full credit:

- **The notebook must be completed in Microsoft PowerPoint using the attached PowerPoint template.** The sketch assignments need to be scanned and inserted in the direction the sketches have been created and the CAD assignments are to be screen shots with the specification tree expanded to the feature level. Isometric sketches need to be inserted in portrait view, while orthographic (multi-view) sketches need to be inserted in landscape view (**Make sure you revise the sketches if you haven't sketched them in the proper orientation and the two scans of the sketches in pair should be in the same size**).
- The following sections are needed:
 - Cover page
 - CGT 163: Graphical Communication & Spatial Analysis (must be computer type and not freehand)
 - Your name (FIRST, LAST) [must be computer type and not freehand]
 - Freehand or CAD illustration of your choice that you created in CGT 163
 - General Information
 - Syllabus (All pages)
 - Assignment Information page (This page)
 - Laboratory Preparations
 - Complete (if you missed any then you need to get the notes from a classmate and recopy them to receive full credit)
 - LP01
 - LP02
 - LP03 (No class for Labor Day holiday; include a slide to indicate so)
 - LP04
 - Up to the date of the initial notebook check
 - Assignments in the order that they were assigned. (if you missed any then you need to get the notes from a classmate and recopy them to receive full credit)
 - Must all read from the same direction so that the notebook does not need to be turned to read it.
 - CAD assignments:
 - Full page print
 - Isometric view
 - Specification tree/model browser needs to be expanded to the sketch level for each appropriate feature
 - **DO NOT DISTORT THE IMAGE TO FIT THE SLIDE. THE CAD PRODUCT NEEDS TO LOOK RIGHT!**
 - Quizzes
 - From Q01 to the last quiz that was submitted.
 - Final Project

Submission Requirements

- **EVERY ASSIGNMENT, LABORATORY PREPARATION, QUIZ, SYLLABUS, THE DIGITAL PORTFOLIO AND FINAL PROJECT REQUIREMENTS, AND THE FINAL PROJECT MUST BE INCLUDED UP THE DATE OF THE INITIAL DIGITAL PORTFOLIO.**
- **IF YOU MISS OUT ON 1-5 OF THE REQUIREMENTS ON THE NOTEBOOK, YOU WILL GET HALF CREDIT.**
- **IF YOU MISS MORE THAN 5 OF THE REQUIREMENTS, YOU WILL RECEIVE ZERO (0) CREDIT FOR THE FINAL NOTEBOOK ASSIGNMENT.**

LABORATORY PREPARATIONS

02LP0105

- There was no Laboratory Preparations 01.

02LP0205

Bolda, Matthew
TXID: 007420999CN0293218
mbo1da@purdue.edu
Assignment #: 02LP0205 D Date: 8/28/17

tools → options → mesh → align → surface → split → options → align → preview → apply
ctrl + alt + shift
create a folder for each assignment
properties → rename, be specific with parts for later use
when saving hit the fit all button and double click your button
right click "assemblies" save in week 02
right click export
cut and paste into compressed file
PDM = "Product Data Management" is how you use your data
and where you can use it
tool bar out manipulations toolbar
fix the base by clicking fix button and click base
double click top file in program to open toolbars
grab compass and drag onto new part to move it
middle mouse button allows you to pan around
middle + right allows you to rotate
middle mouse button + TAB right allows zoom in/out
onset constraint, click both surfaces and set distance "0"
click hide/clear/undo/redo button to set new location from constraint

02LP0305

- No laboratory preparation class due to Labor Day holiday

02LP0405

Bolda, Matthew
TXID: 00242099CN0293218
mbo1da@purdue.edu

7

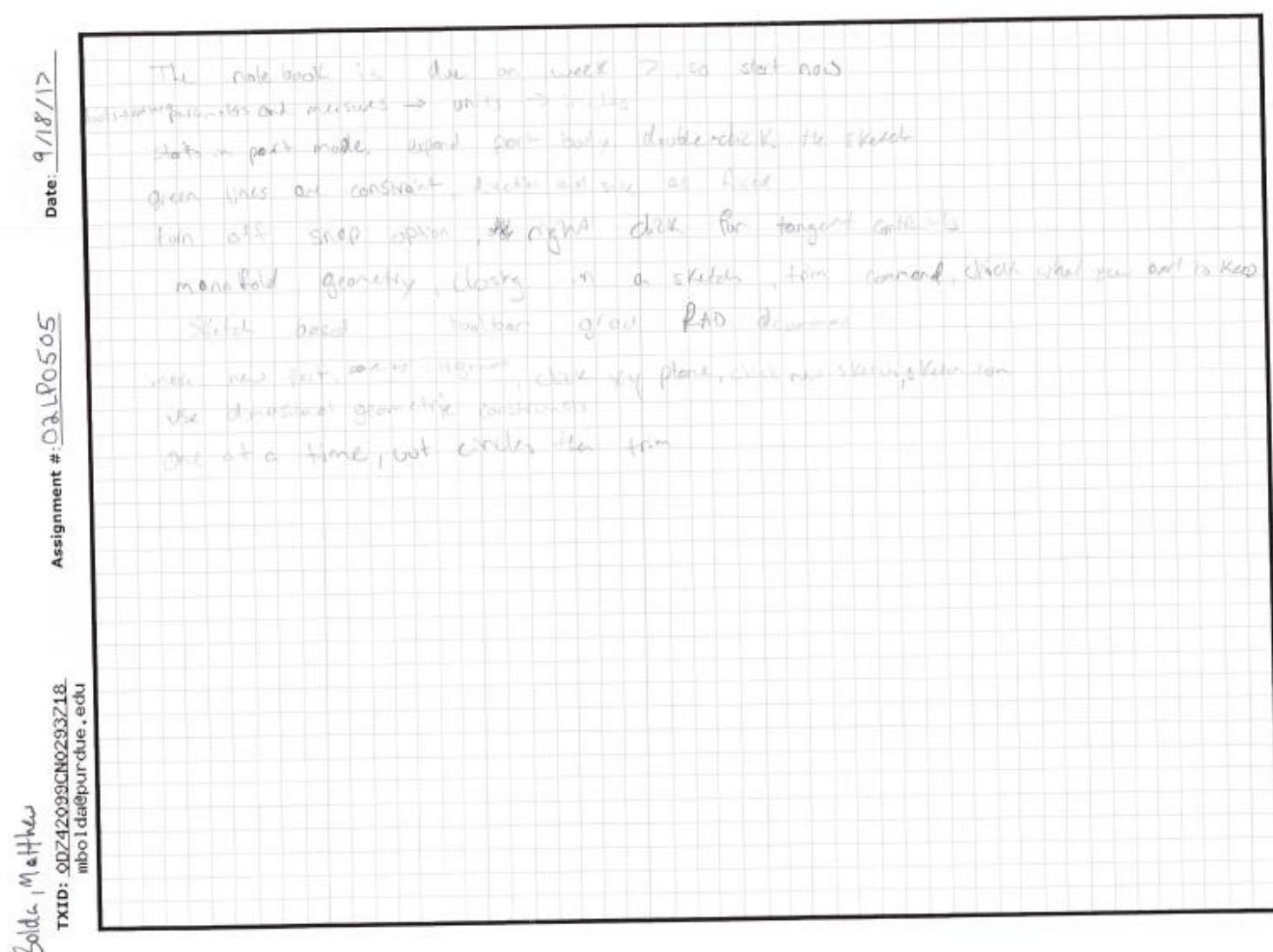
Assignment #: 02 LP0405

Date: 9/11/17

Write in landscape orientation

- making assemble/disassemble move
- Digital mockup → "DMU fitting"
- "DMU simulation" toolbar
- tracks are set up in sequences
- first assignment just disassembled
- to edit tracks must close player
- first button on toolbar to start new track opens track manager
- click on tree and component will land on item
- you must record the sequence
- track is like song sequence=playlist
- 4th button is sequence
- original development acceleration/descent
- by player back to start
- track complete to middle of
- right click on item direction of original item
- right click track → favor track
- double click over track and change item to longer pushing but keep pushing
- merge tracks together
- change name to different number

02LP0505



02LP0605

Bolda, Matthew
TXID: 0DZ42099CN0293218
mbo1da@purdue.edu

Assignment #: 02LP0605

Date: 9/25/17

Construction lines allow you to make changes very quickly and efficiently
start working parts in on this grade
Pretty much part feature needs defining by
using the construction line can change height width, and depth very quickly for
many separate dimensions for all different features
to add features do it sketch mode then pull it
to remove features, sketch, trim, go out of sketch mode pocket or negative construction
The two zp files are in same sub directory
make sure to include all parts in zp folder for running in
part "hatch" will not come in "4.71+400-l"

02LP0705

Bolda, Matthew
TXID: 9D242099CNo293218
mbo1da@purdue.edu

Assignment #: 80
02LP0705

Date: 10/2/17

- You will start on positive axis
- Should be approximately 3 diameter meters long
- 8.75 meters from the center
- Constrain left side to origin
- Constrained left side and right side
- dimensions: .75, 1, .25, 2.75, 5 from ~~center~~^{left to right} to center
- dimensions: .75, .1625, .75, 1.875 to right vertices
- Thick plastic indicates the outside part material is solid
- call this piece the rim
- do not copy them
- Will be creating sketch to constrain
- Use Arcs and circles at 12:25
- note about ~~center~~^{left} when doing constraints for bolts

02LP0805

- **There is no LP08 as the fall break cancelled all Monday classes.**

02LP0905

Bolda, Matthew
TXID: 0DZ42039LCN02933718
mbo1da@purdue.edu

Assignment #: 02 LP0905 (7)

Date: 10/16/17

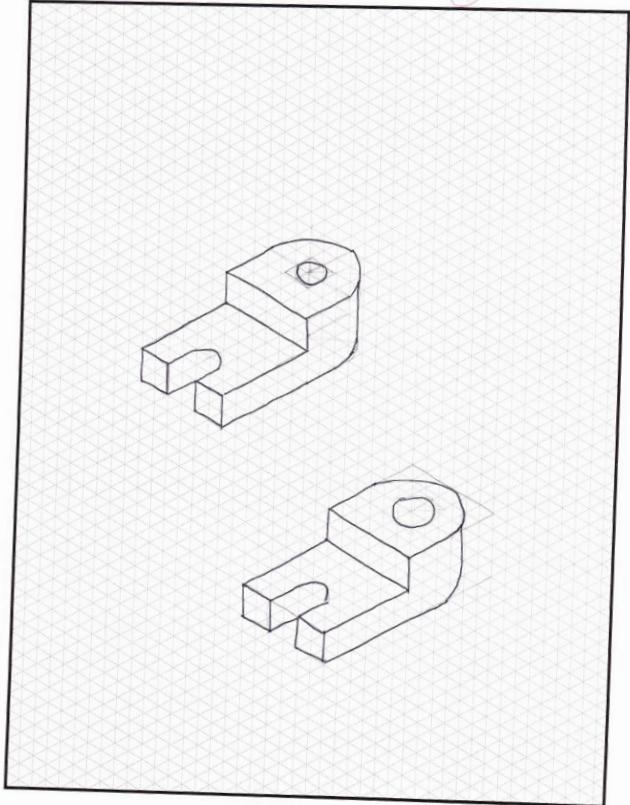
Start on Page 33 to begin first assignment
doesn't matter if you start at origin or not
draw using profile button, fix dimensions
1.5, then mirror the product
Find Apply material button \rightarrow metal \rightarrow iron, select top of specification tree
"Dress up Features" \rightarrow shell properties
order is important, holes can affect shelling
Operations \rightarrow Projections \rightarrow all but bottom and right side
Edge Fillet rounds things out
- Lose less material, removes sharp edges, makes it easier to remove from mould
pick top plane and sketch project 1. side leg, 2. bottom edge of plane, 3. sides of top
4. back side

02LP1005

Bolda, Matthew

TXID: 0D742099CN0293718
mbo1da@purdue.edu

Assignment #: 02LP1005 7 Date: 10/23/17



Bolda, Matthew

TXID: 0D742099CN0293718
mbo1da@purdue.edu

Assignment #: 02LP1005

Date: 10/23/17

Naming convention Matthew_Bolda_XX42XX

Participating in the study has no effect on grade whatsoever

Mental cutting test will be the first 20 minutes

02LP1105

Bolda, Matthew

TXID: 0DZ42099CN0293218

mbo1da@purdue.edu

Assignment #: 02LP1105

Date: 10/30/17

always do geometric ~~area~~ constraints first, that helps hold it
difference between drawing and sketch and part

drawing on paper isographic orthographic

sketch is on catia sketcher mode

part is also catia, 3D sketch, 3D object

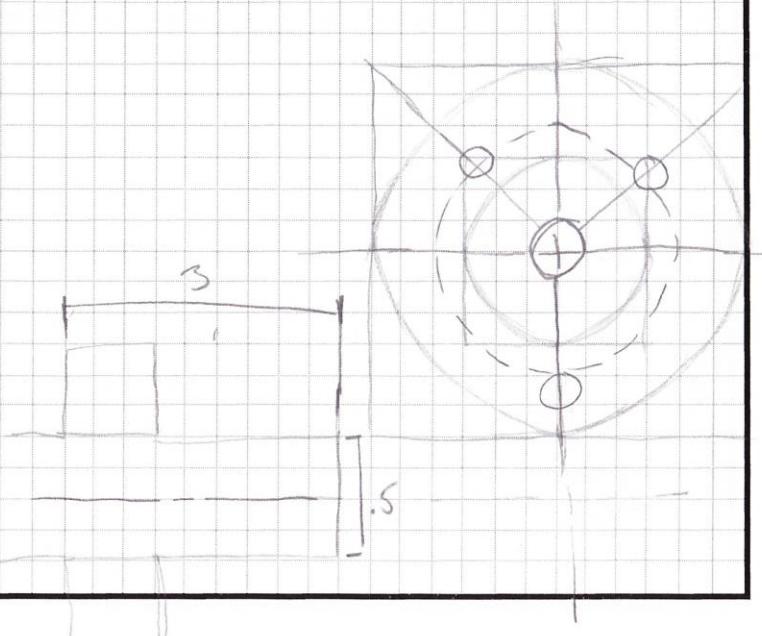
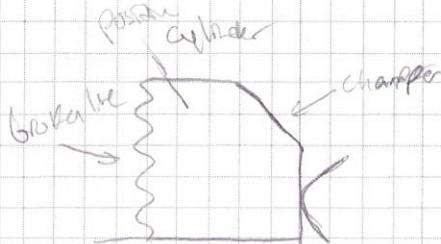
MBD - model based definition

email interviewers to get your name out

sharper edges are harder to work with,

raised up areas are important to mold

Size th positive and negative geometry



Bolda, Matthew
Matthew Bolting
TXID: 0D742099CNO2933218
mbolda@purdue.edu

Date: 11/6/17

Assignment #: 02 LP1205

(1)

Surface modeling - helps create something complex like a coffee cup full with many edges

Do not be late to next lecture

wire-frame model you can find surface area and volume

Solid models you can find mass and center of gravity, must be totally perfect

Sectional views help show the design

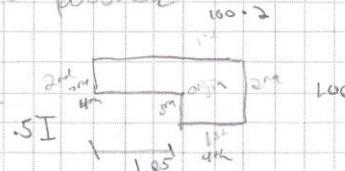
- dashed lines are hidden and are important to help show design

- abc places the most important view is A, capital letters, A,B,C

It's important to annotate as much as possible

FDA - Finite Data analysis

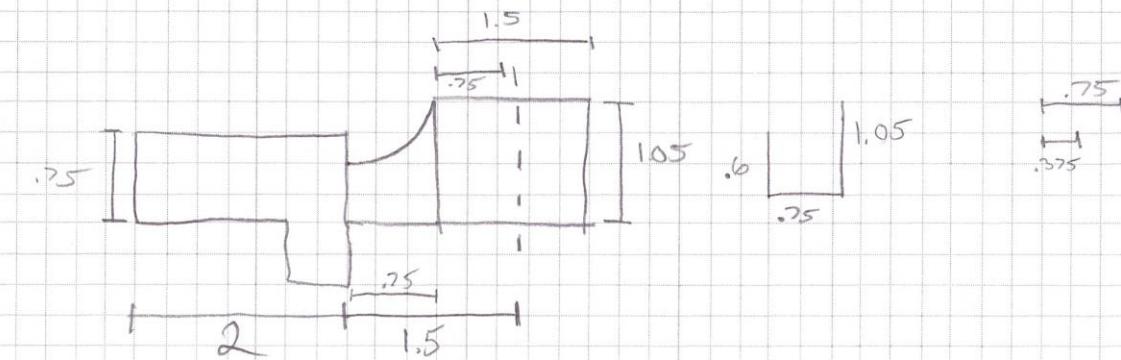
Choose frontal plane, start at origin.



- created a mold model

- pad, reverse it, 2.5 - 100

- grab bottom, put place in air 100 for circle



02LP1305

BOLDA, MATTHEW

TXID: 0DZ42099CNO293718
mbo1da@purdue.edu

Assignment #: 02LP1305

Date: 11/13/17

- Solid models have mass
- wireframe is a surface design
- do not waste time, lab takes a long time
- wireframe toolbar has similar icons
- Don't expect to know every icon in Catia
- start with assignment 57
- Catia V3, Catia V4 "Legacy", all the old Catia updates
 - hard to train new people when it updates
- Creo was pros engineer was originally better, came in 1988
- If you need help, go to youtube

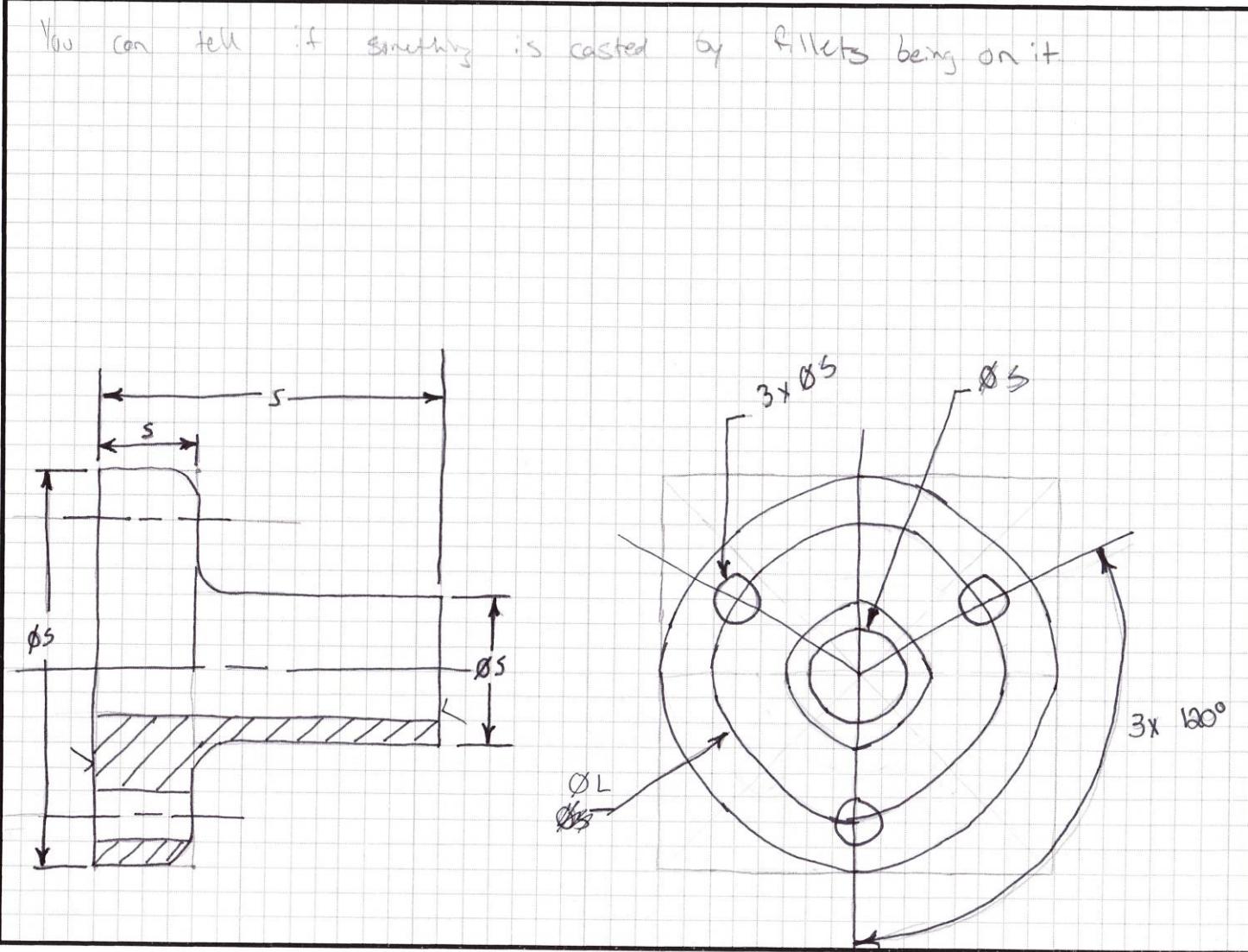
02LP1405

BOLDA, MATTHEW

TXID: 0DZ42099CNO293718
mbolda@purdue.edu

Assignment #: 02LP1405

Date: 11/20/17



02LP1505

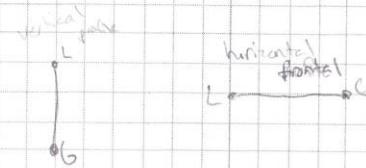
BOLDA, MATTHEW

TXID: 0D742099CNO2933718
mbo1da@purdue.edu

Date: 11/27/17

Assignment #: 02_LP1505

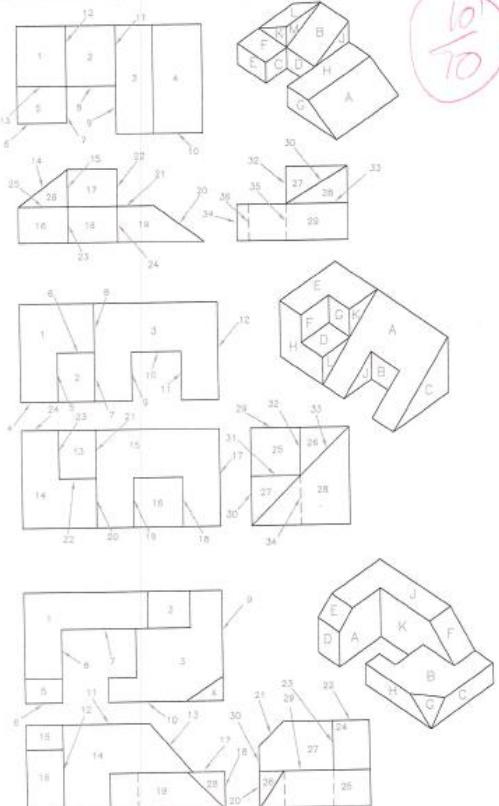
- LATIA - computer aided three-dimensional, interactive application
- solid works, inventor, solid edge, catia, creo
 - Constraints geometry and parameters on what is needed for different programs to be converted
 - m4a, video games and cartoon animations
 - 3d studio max and autodesk only want to work with inventor
 - Product life-cycle management
 - model based definition -MBD-



ASSIGNMENTS

020105 – Plane Identification

Match each surface in the isometric view with the corresponding surfaces in each of the orthographic views. Each number may be used once, more than once, or not at all. Some squares may remain blank. In the "SUP" column mark an "H" if the surface is *horizontal*, a "F" if it is a *frontal* surface, a "R" if it is a *profile* surface, an "I" if it is an *inclined* surface, and an "O" if it is an *oblique* surface. If a number has a leader, it indicates an "edge view" of the surface. If there is no leader, the number is directly on the indicated surface.



ISO	ORTHO	SUP
A	4 20 29 I	
B	2 17 30 I	
C	7 23 P	
D	8 18 35 F	
E	6 16 36 F	
F	5 25 H	
G	10 19 34 F	
H	3 21 33 H	
J	11 22 28 P	
K	13 26 32 F	
L	1 14 I	
M	12 15 27 P	

ISO	ORTHO	SUP
A	3 15 23 I	
B	10 16 R	F
C	12 17 28 P	
D	2 22 31 H	
E	1 24 29 H	
F	5 27 35 P	
G	6 13 22 F	
H	4 14 20 F	
J	9 19 P	
K	8 21 26 P	
L	7 20 27 P	

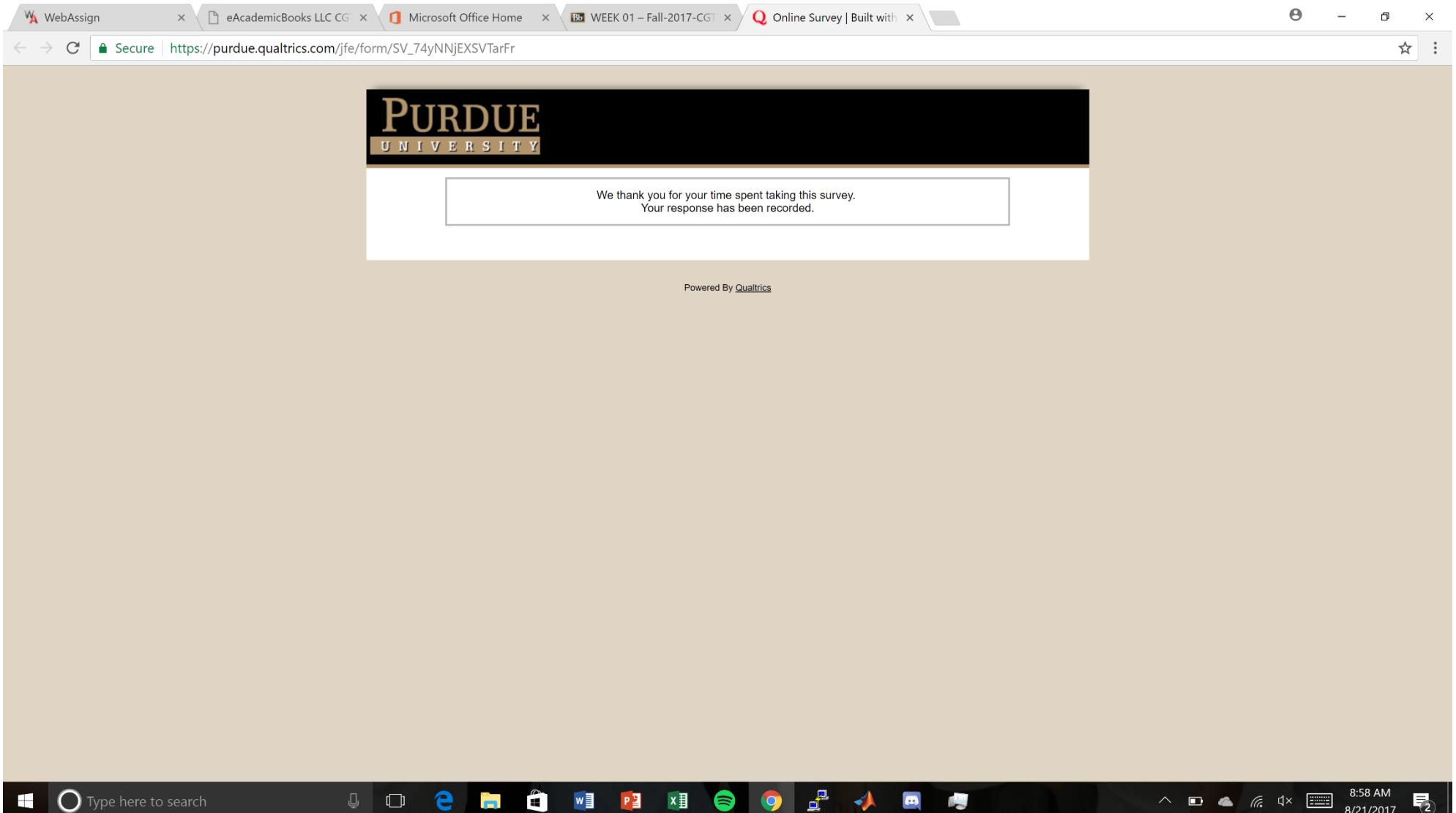
ISO	ORTHO	SUP
A	8 12 27 P	
B	2 17 29 H	
C	9 18 25 P	
D	6 16 20 F	
E	5 15 21 I	
F	2 13 24 I	
G	4 28 26 O	
H	10 19 20 F	
J	1 11 22 H	
K	7 14 23 F	

NAME: Matthew Bolda, Matthew
 ASSN# 020105
 020105 HS 1

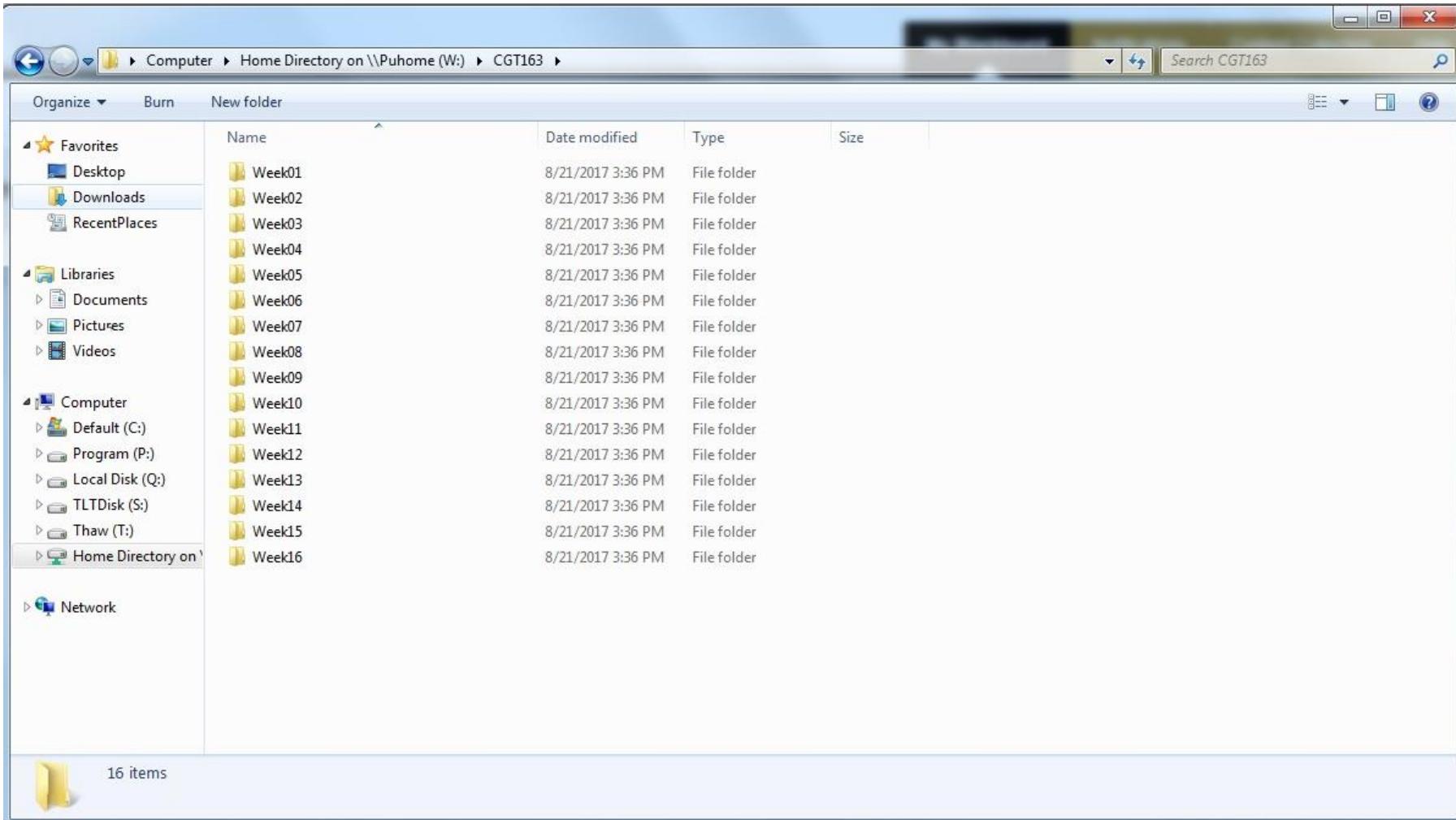
020205 – CGT163 Syllabus

SEE GENERAL INFORMATION SECTION

020305 – Course Questionnaire



020405- Folder Creation

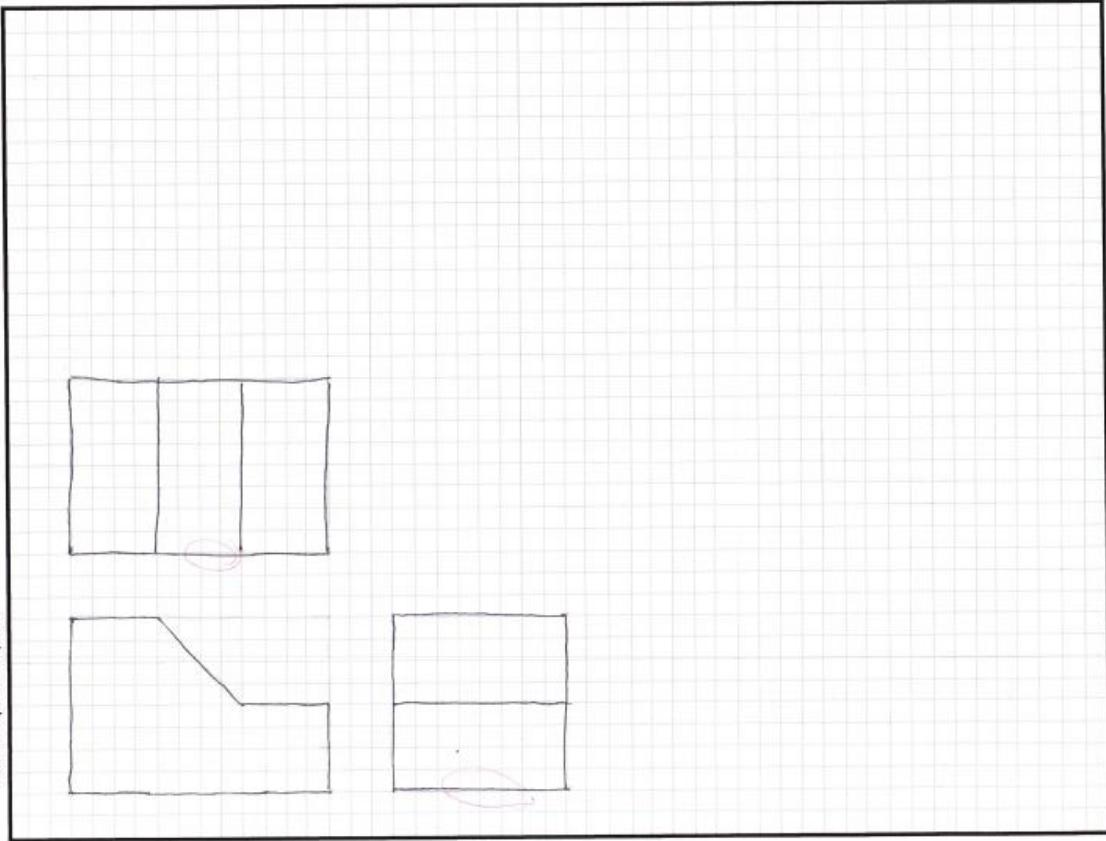


020505

Date: 08-25-17

Assignment #: 020505

Bolda, Matthew
TXID: 00742099CN0293718
mbo1da@purdue.edu

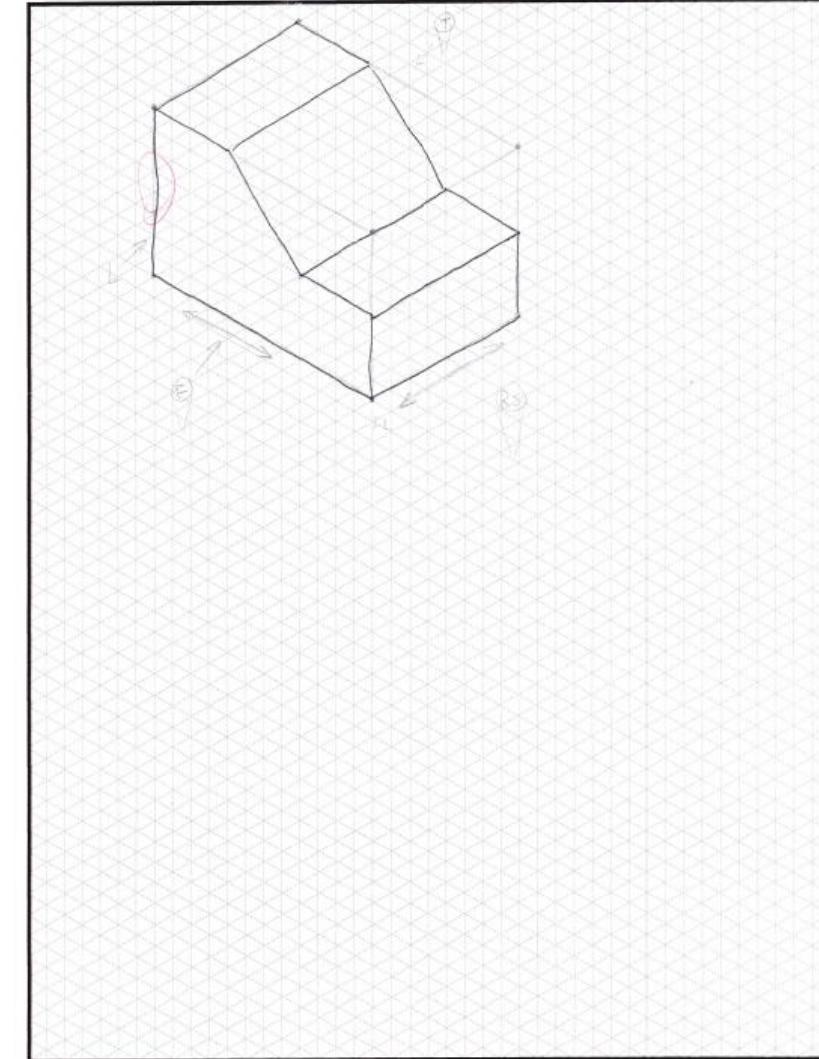


Bolda, Matthew
TXID: 00742099CN0293718
mbo1da@purdue.edu

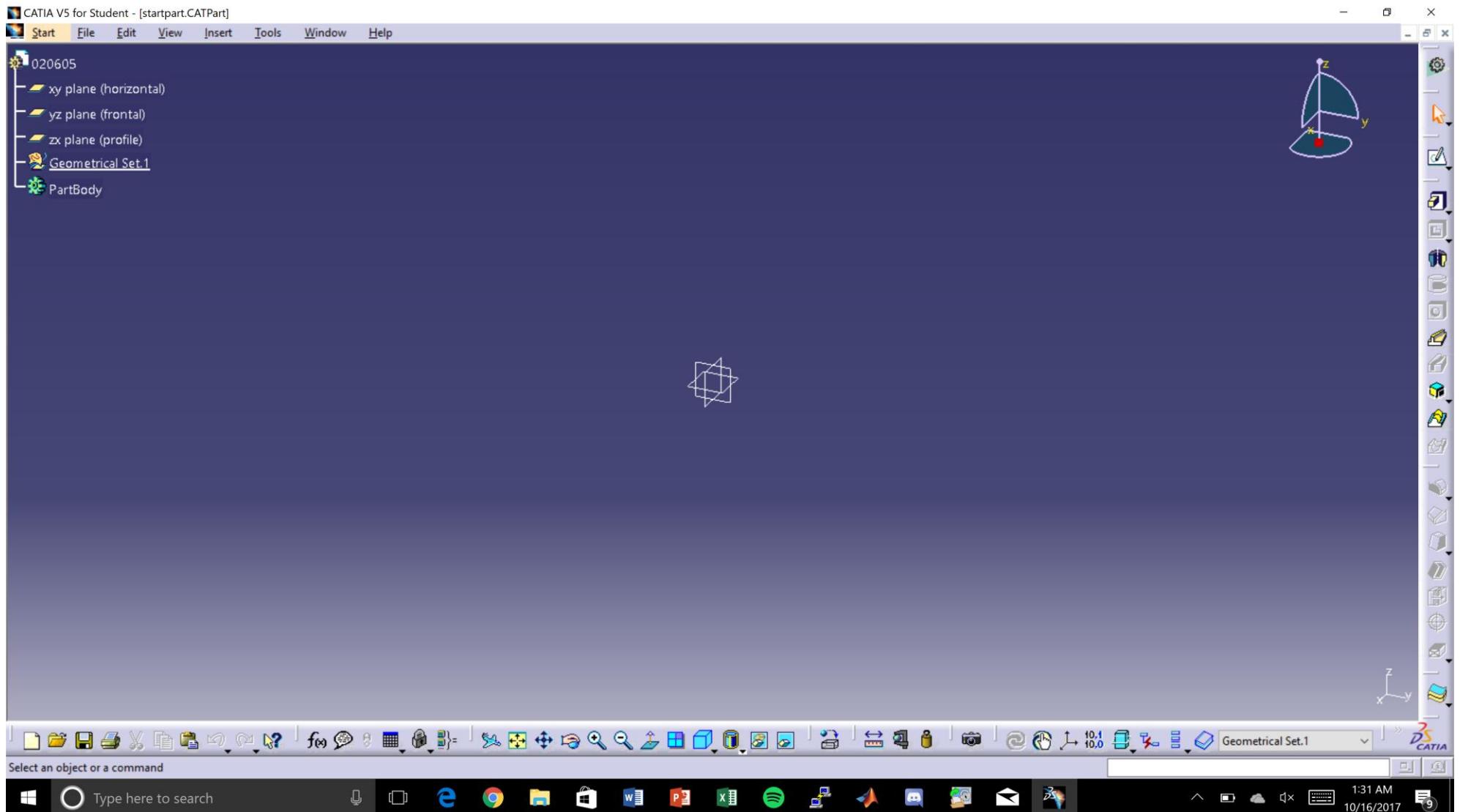
Assignment #: 020505

9
10

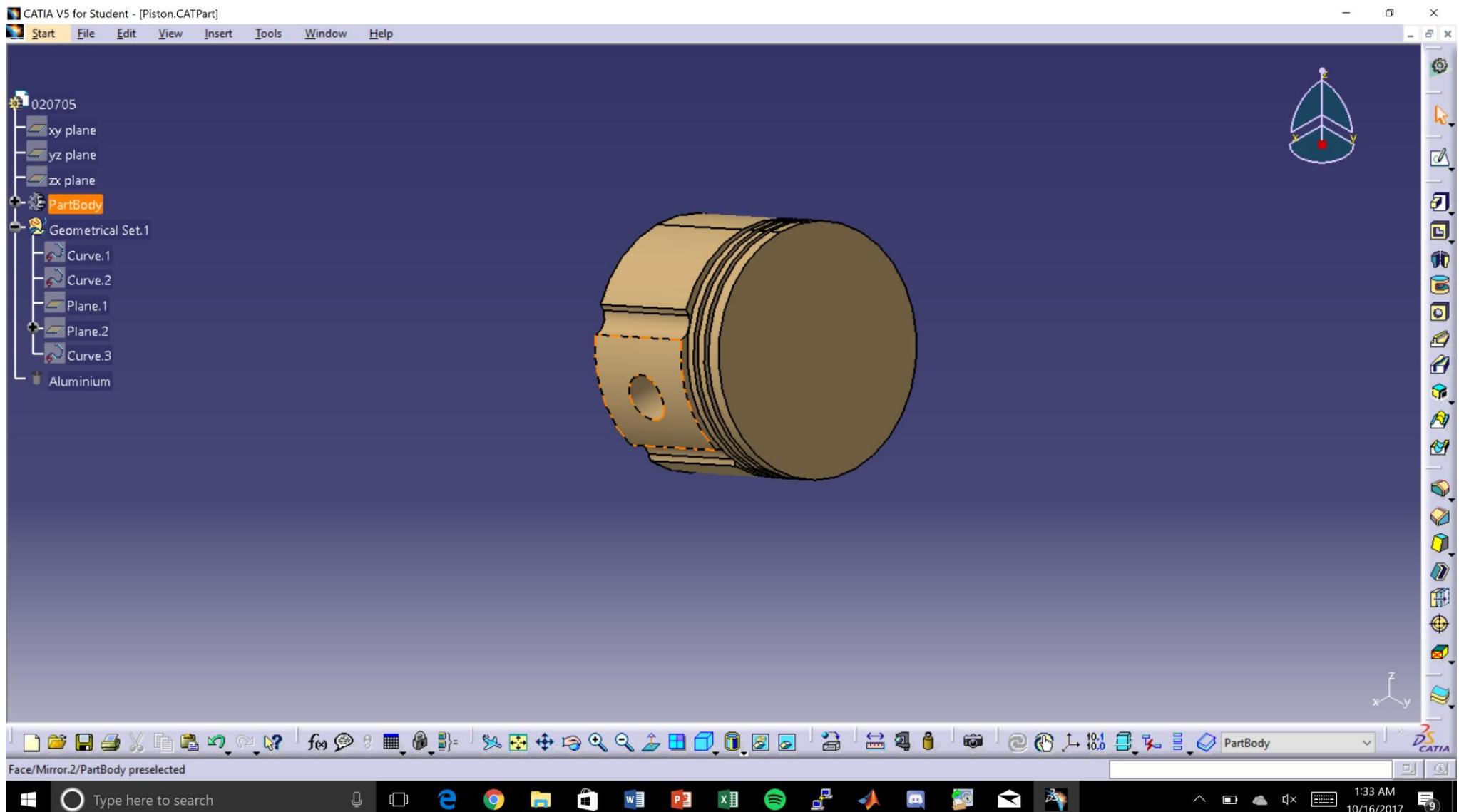
Date: 8/23/17



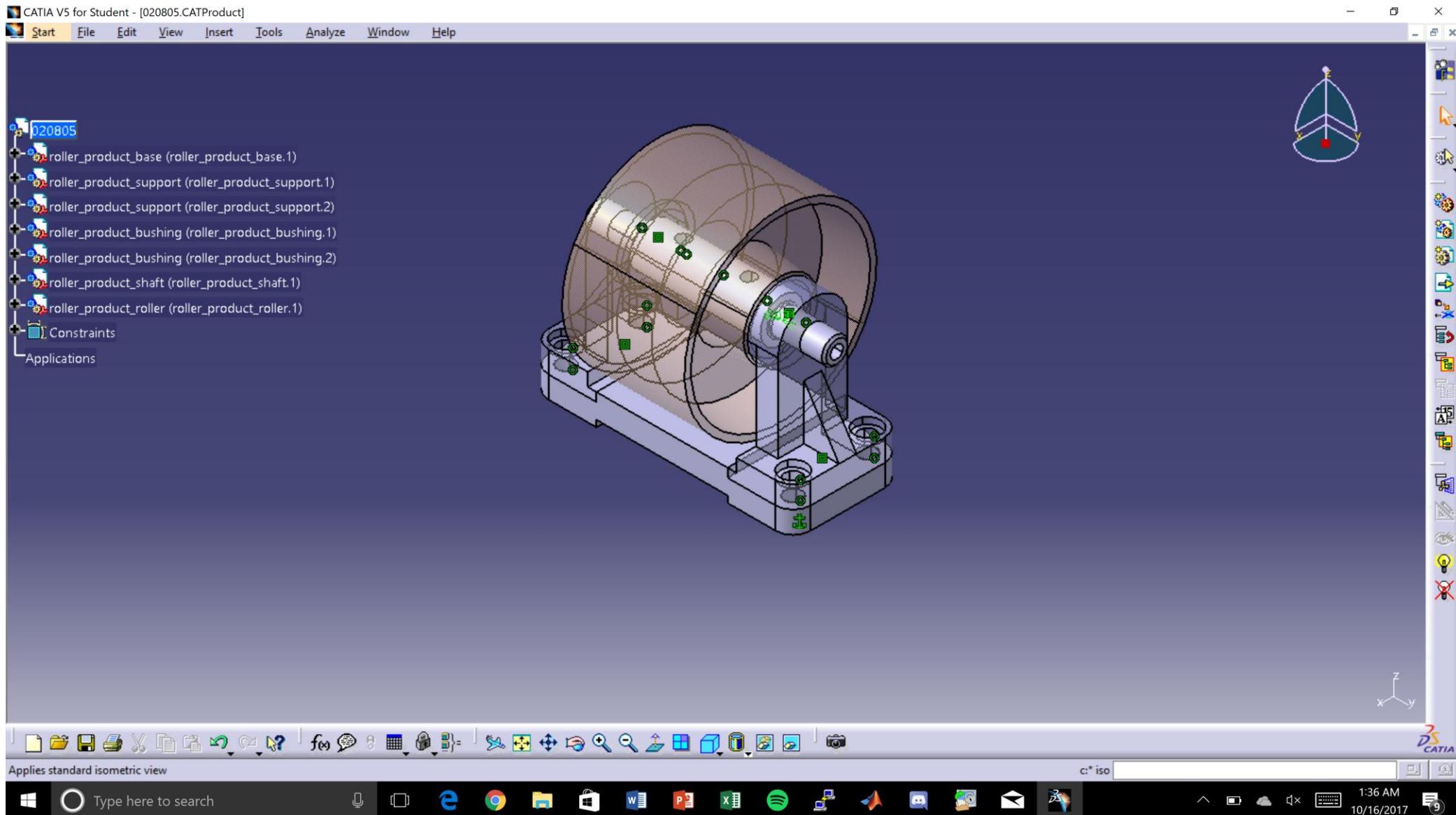
020605



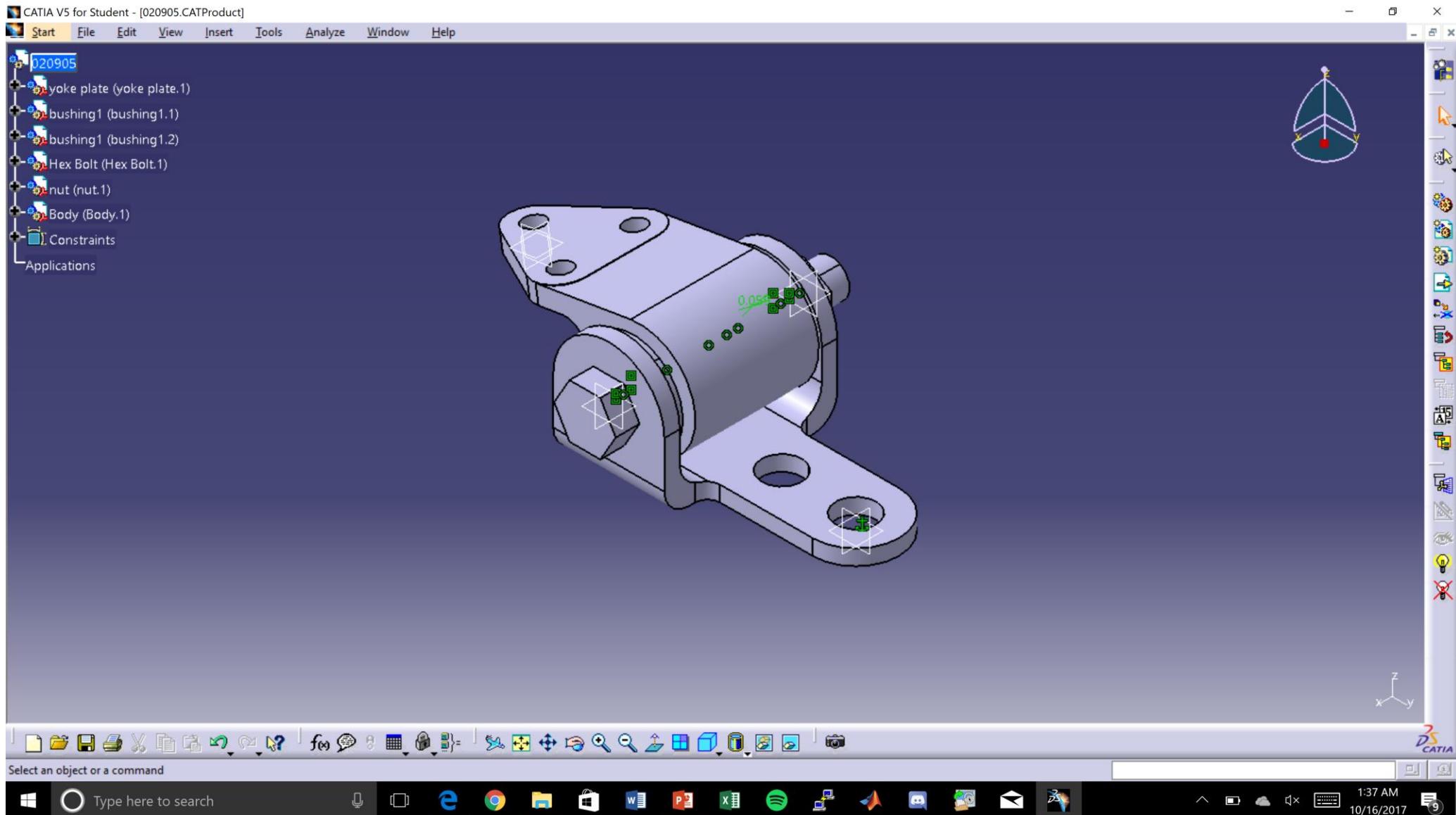
020705



020805



020905



021005

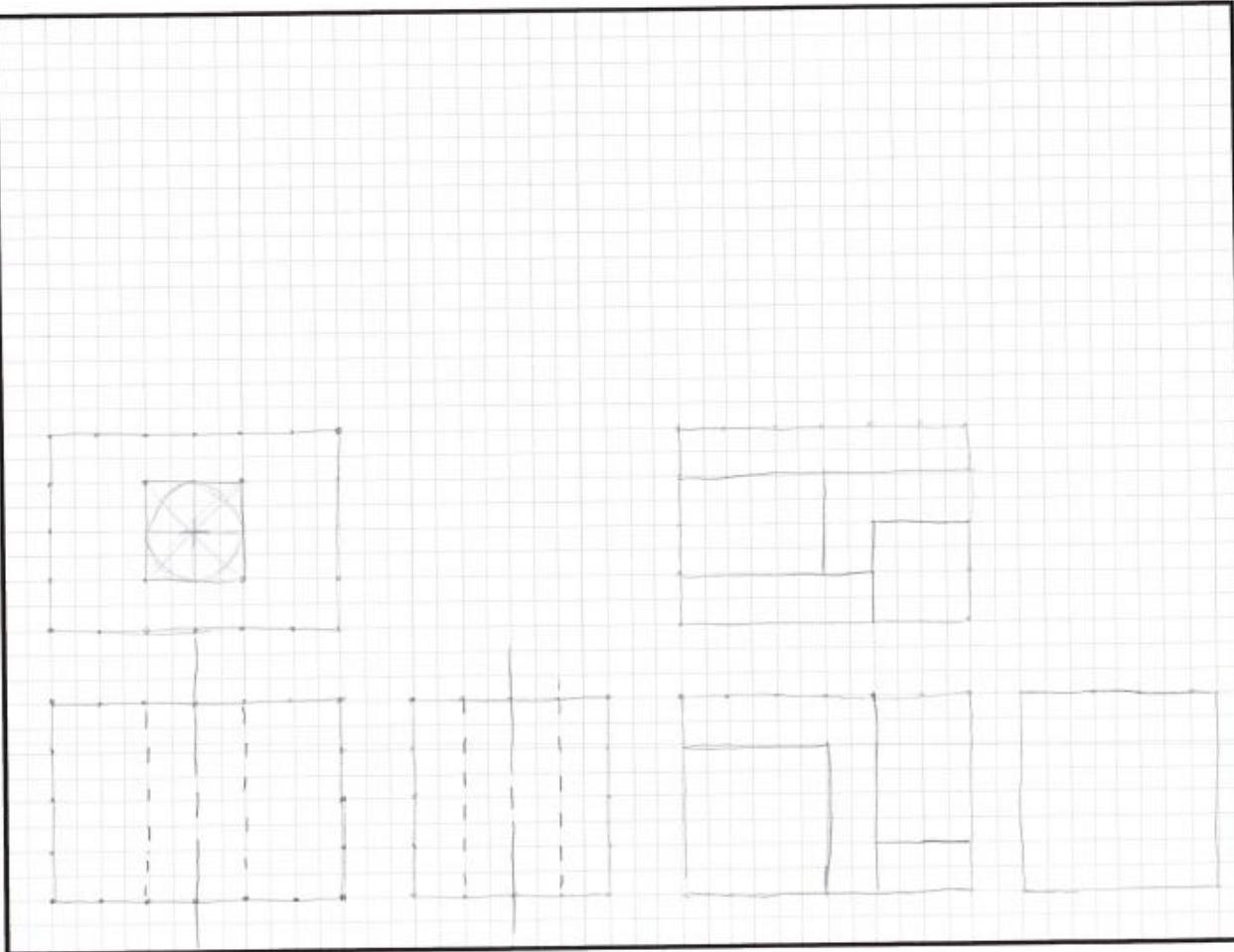
Bolda, Matthew
TXID: 00742099CN0293718
mbo1da@purdue.edu

10/10/12

Date: 8/30/12

Assignment #: 021005

10/10

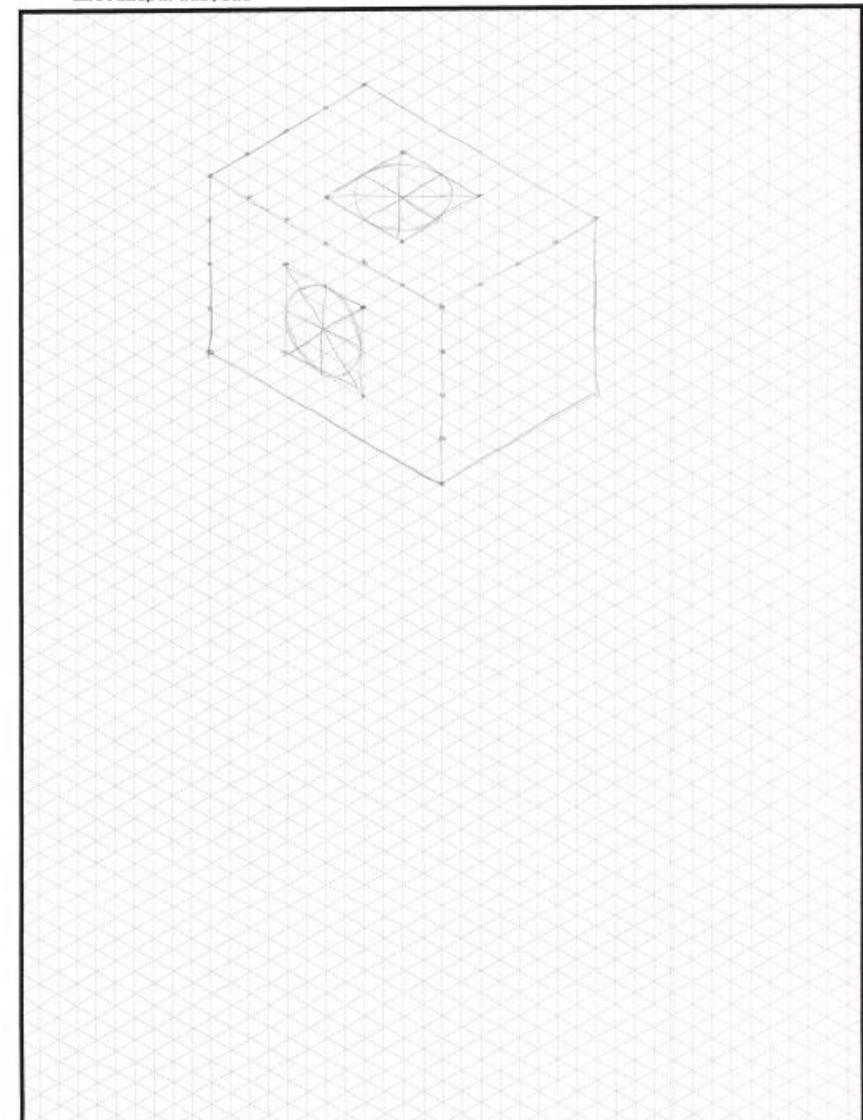


Bolda, Matthew

TXID: 00742099CN0293718
mbo1da@purdue.edu

Assignment #: 021005

Date: 8/30/12

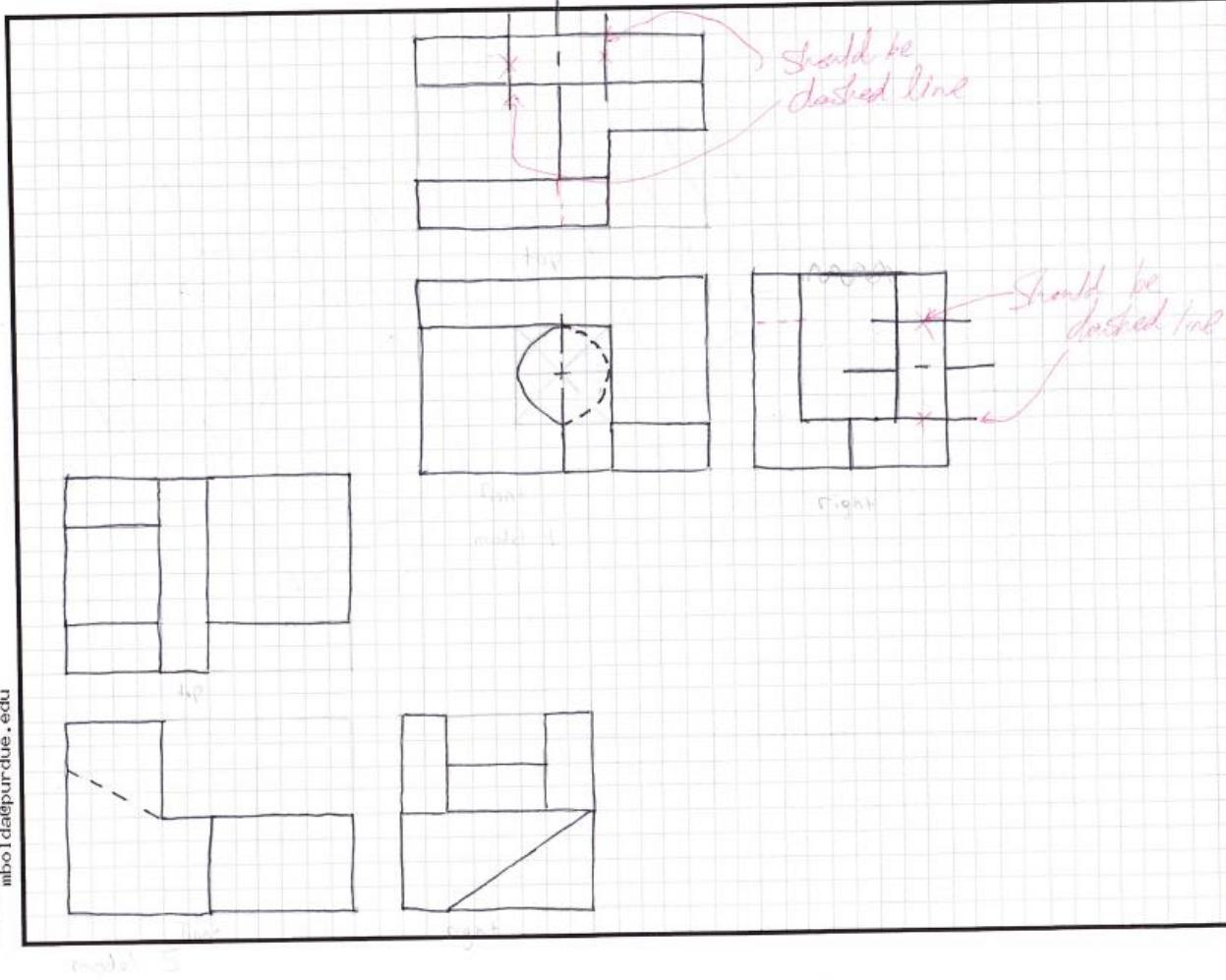


021105

Date: 9/11/17

Assignment #: 02_1105

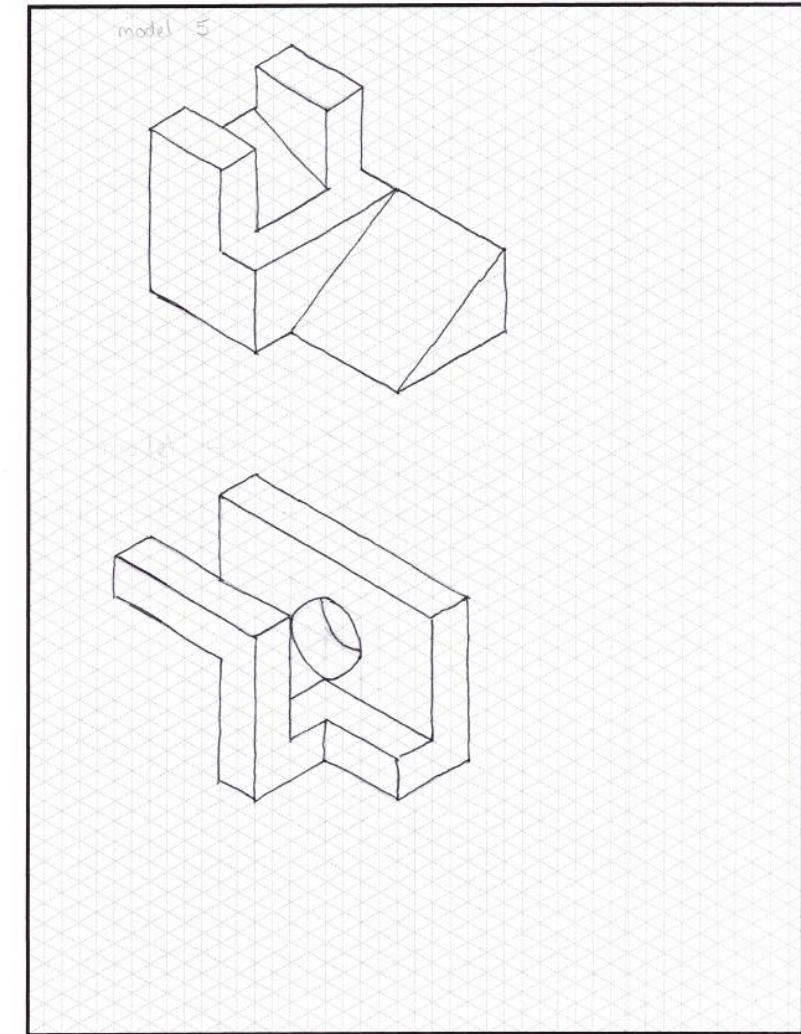
Bolda, Matthew
TXID: 0D742099CN0293718
mbo1da@purdue.edu



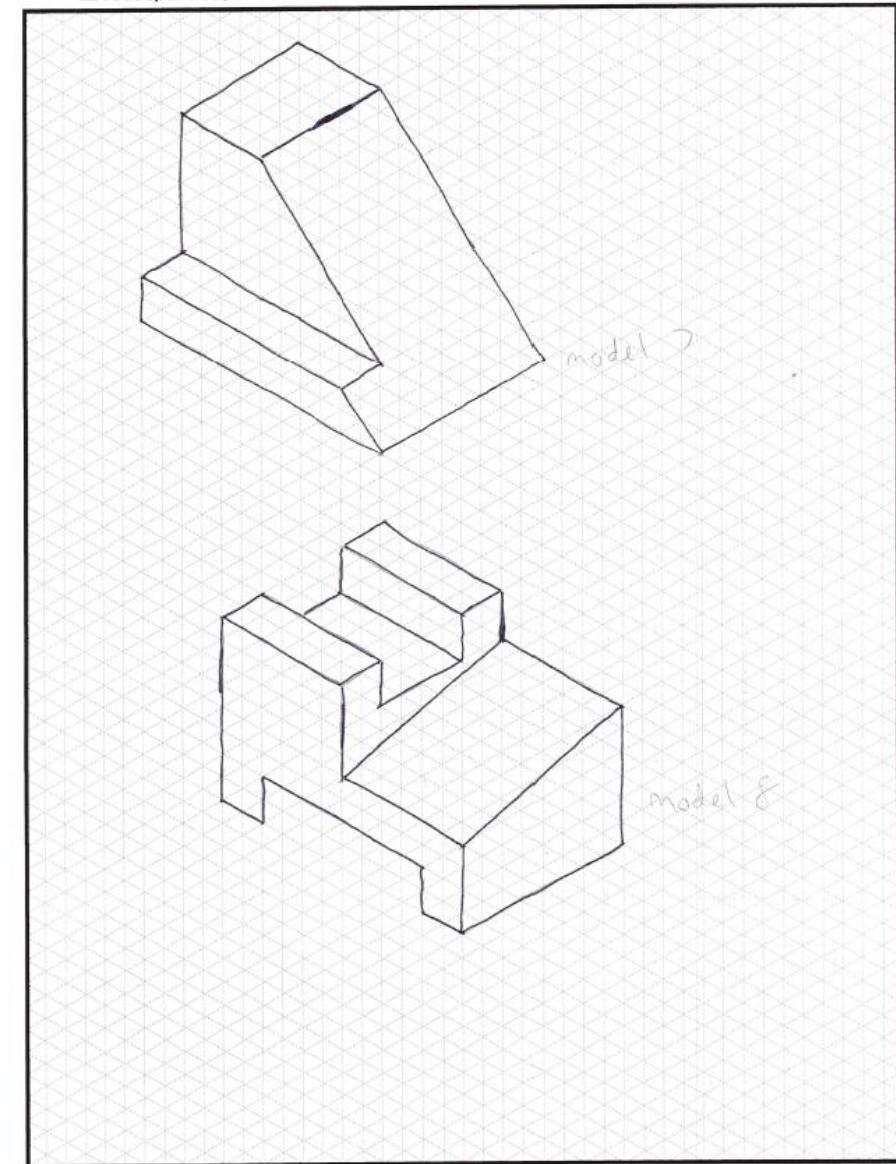
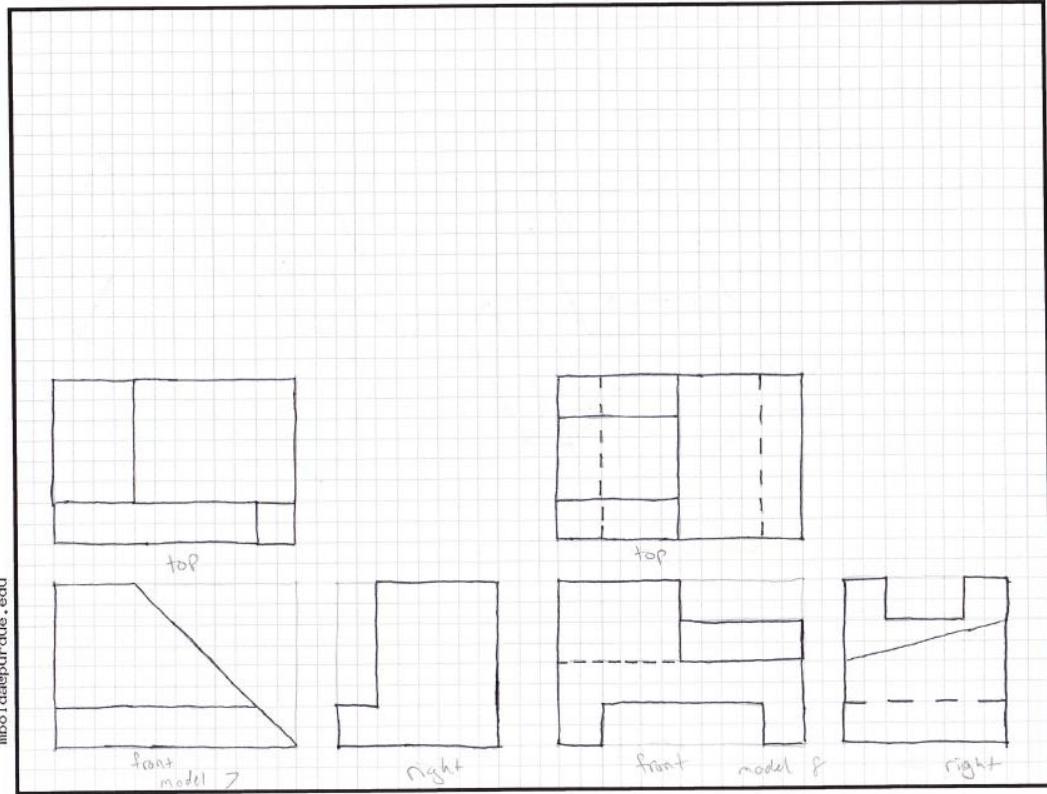
Bolda, Matthew
TXID: 0D742099CN0293718
mbo1da@purdue.edu

Assignment #: 02_1105

Date: 9/11/17



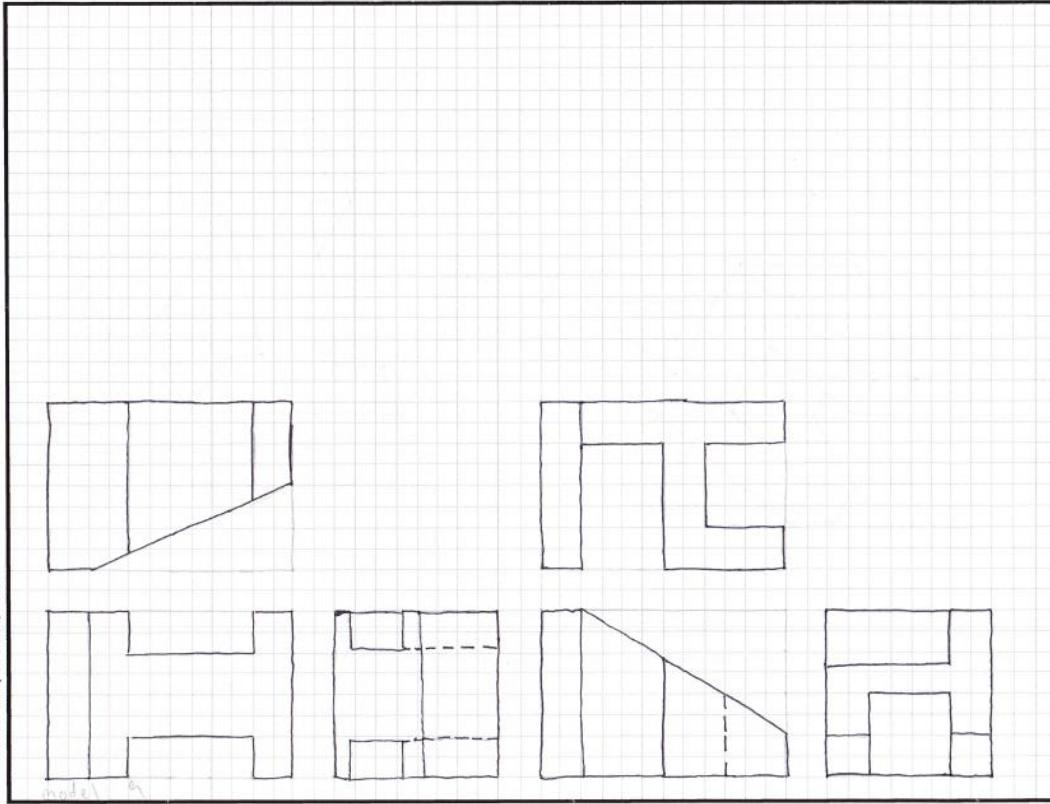
021205



021305

Bolda, Matthew
TXID: 0D742099CN0293718
mbo1da@purdue.edu

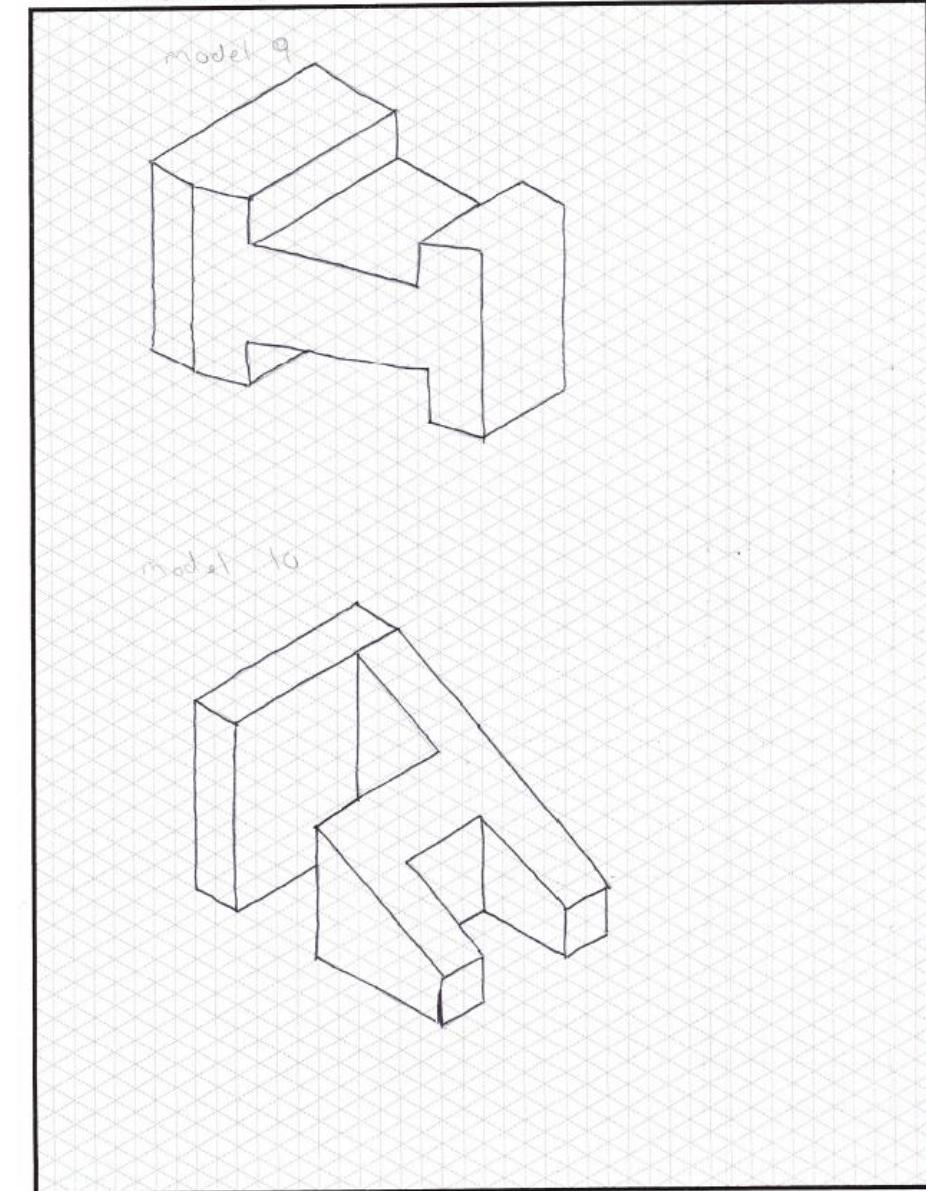
Assignment #: 021305
Date: 9/11/17



Bolda, Matthew
TXID: 0D742099CN0293718
mbo1da@purdue.edu

Assignment #: 021305
Date: 9/11/17

10
10

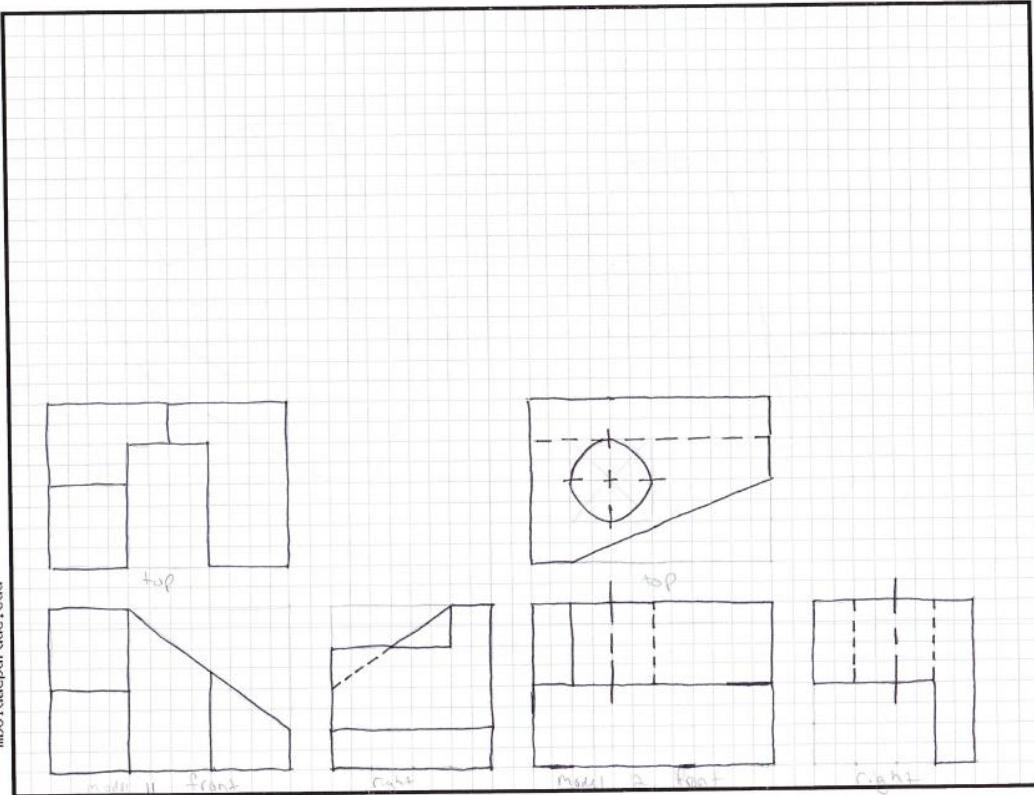


021405

Date: 9/11/17

Assignment #: 021405

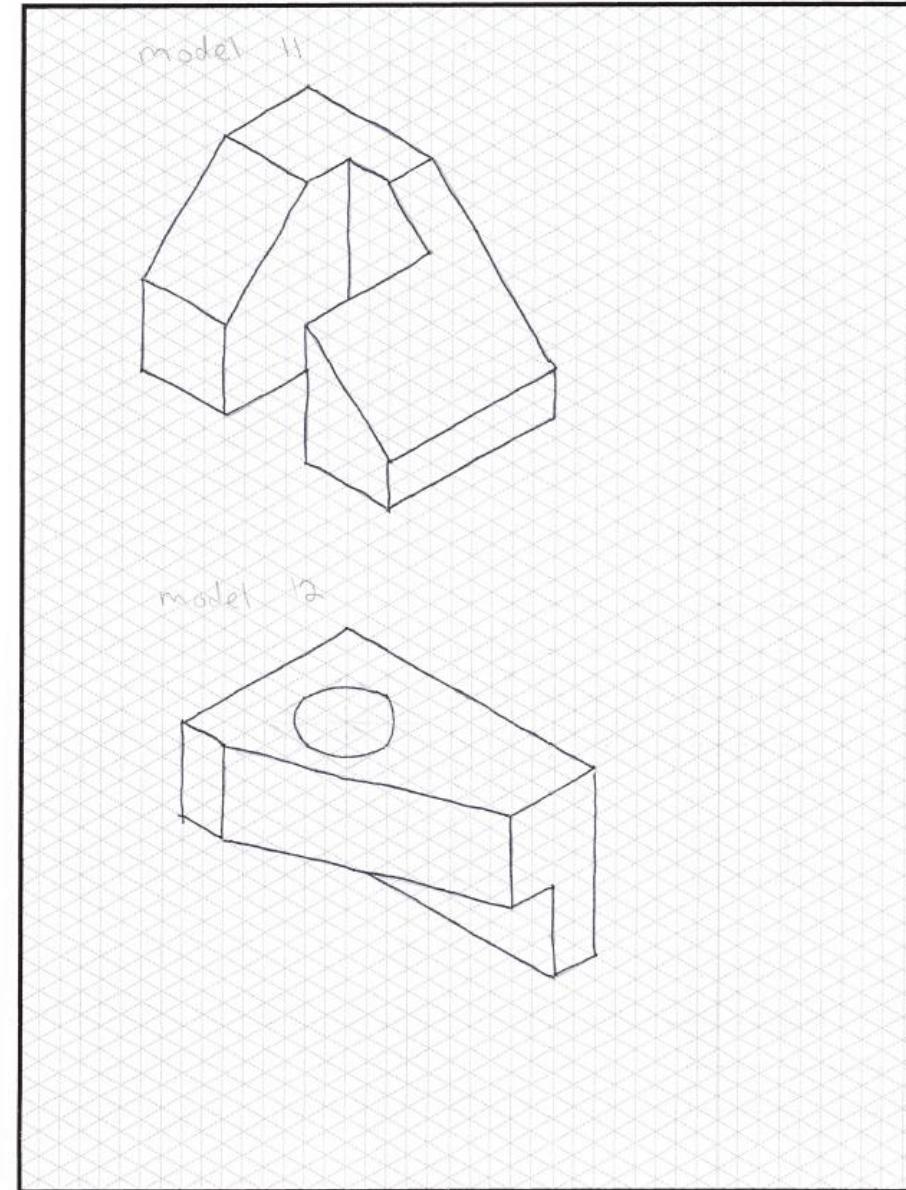
Bolda, Matthew
TXID: 0D742099CN0293718
mbolda@purdue.edu



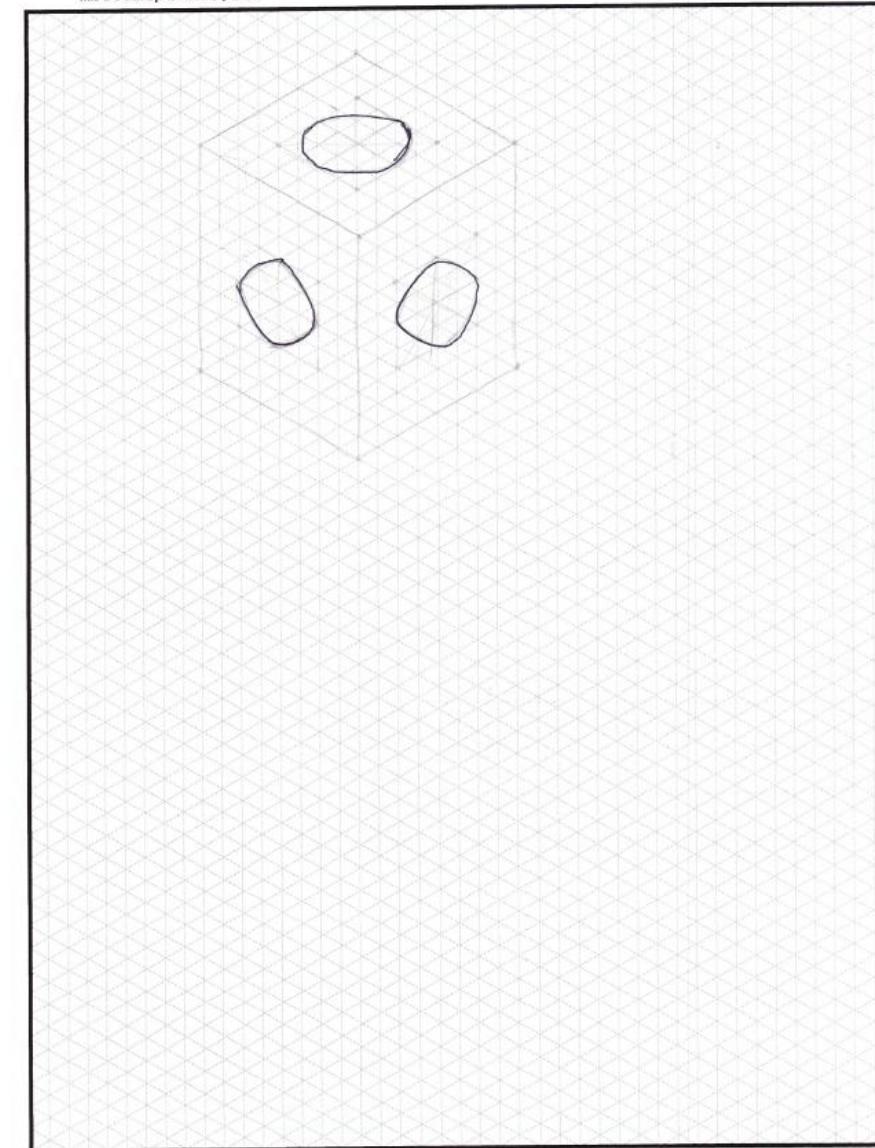
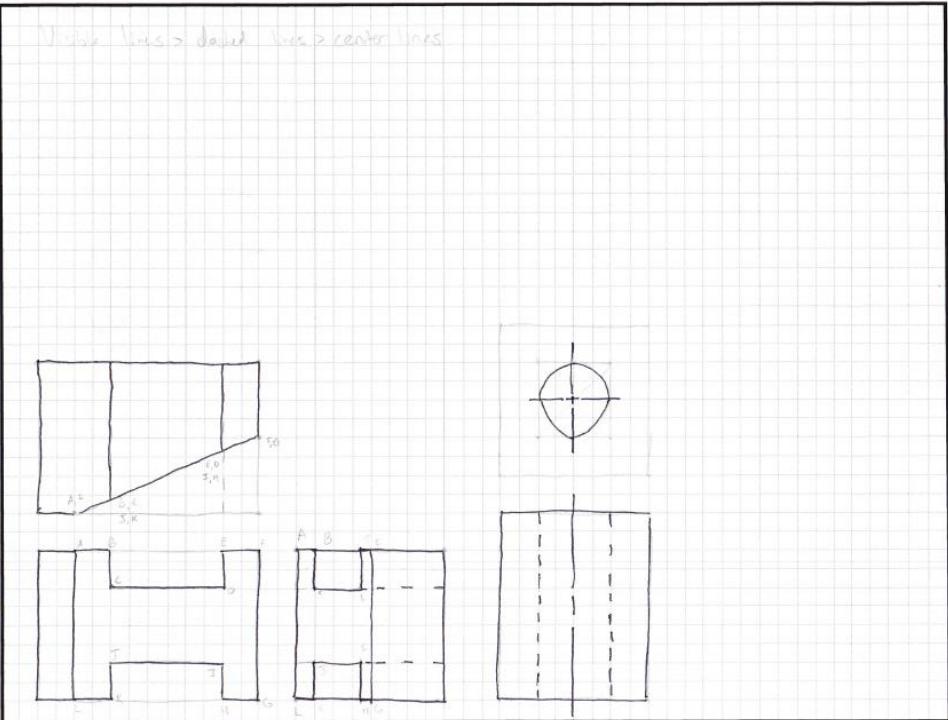
Bolda, Matthew
TXID: 0D742099CN0293718
mbolda@purdue.edu

Assignment #: 021405
Date: 9/11/17

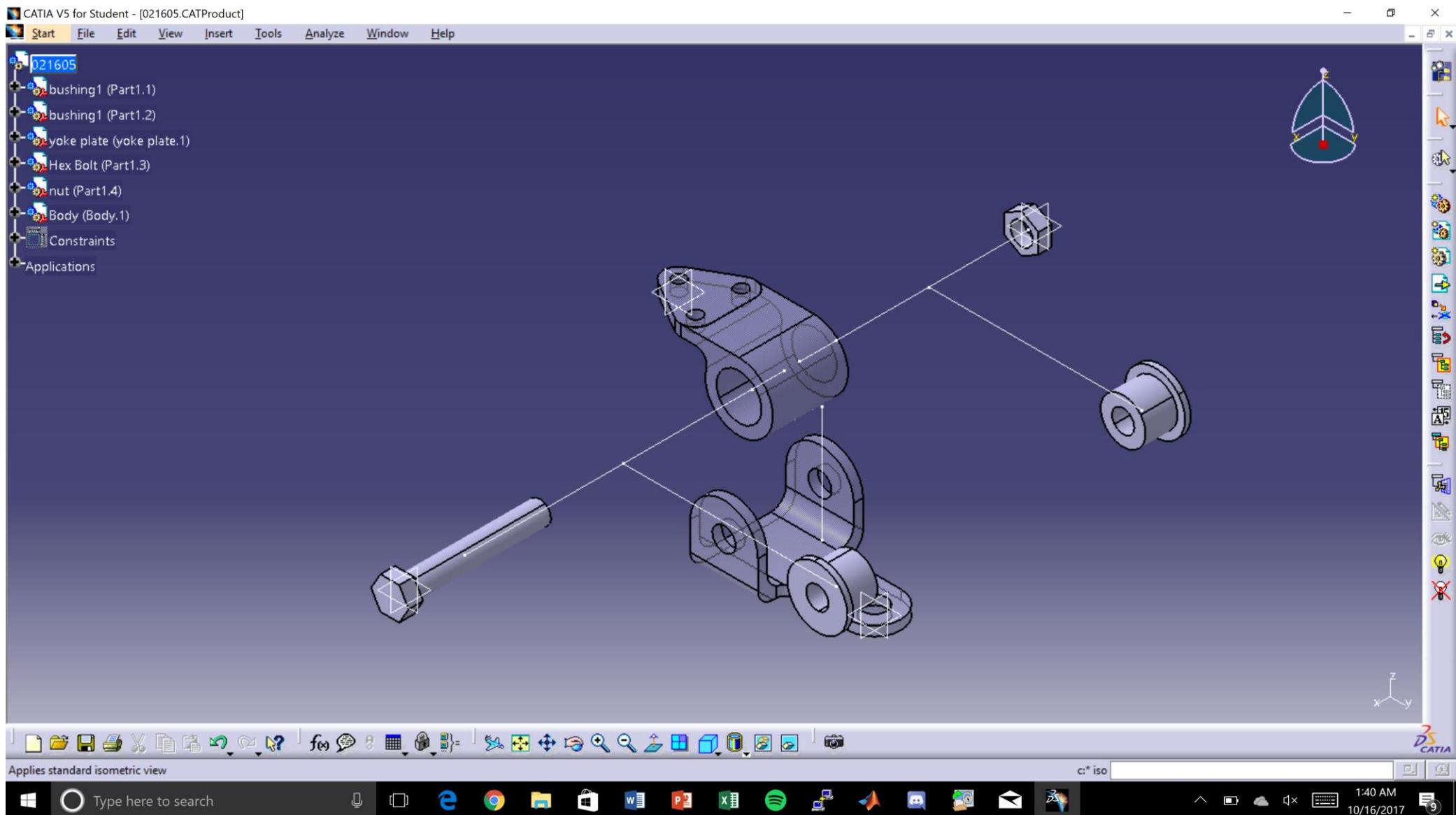
14
10/10



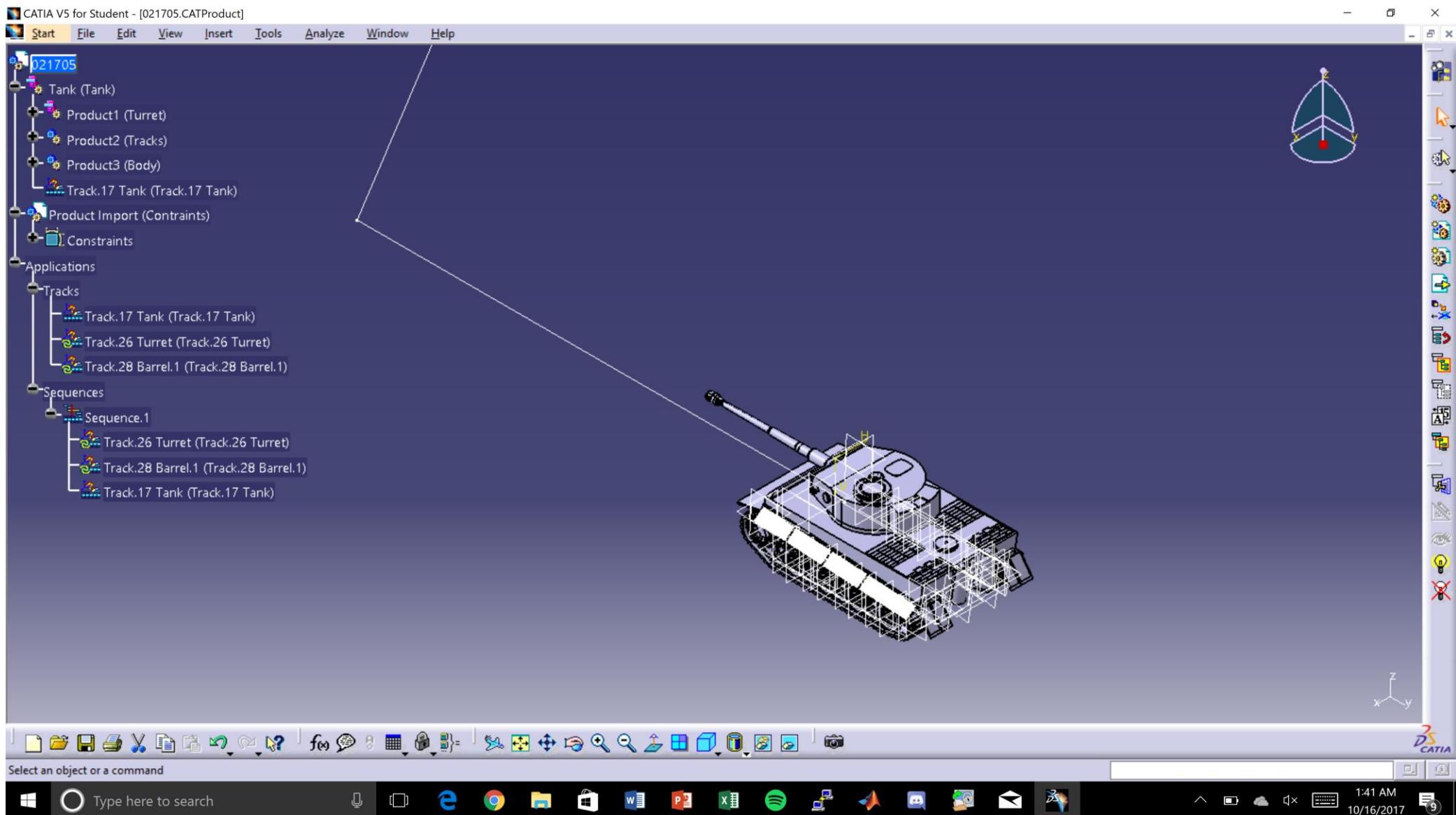
021505



021605



021705



021805

Bolda, Matthew
TXID: 0DZ42099CNO293713
mbo1da@purdue.edu

Assignment #: 021805

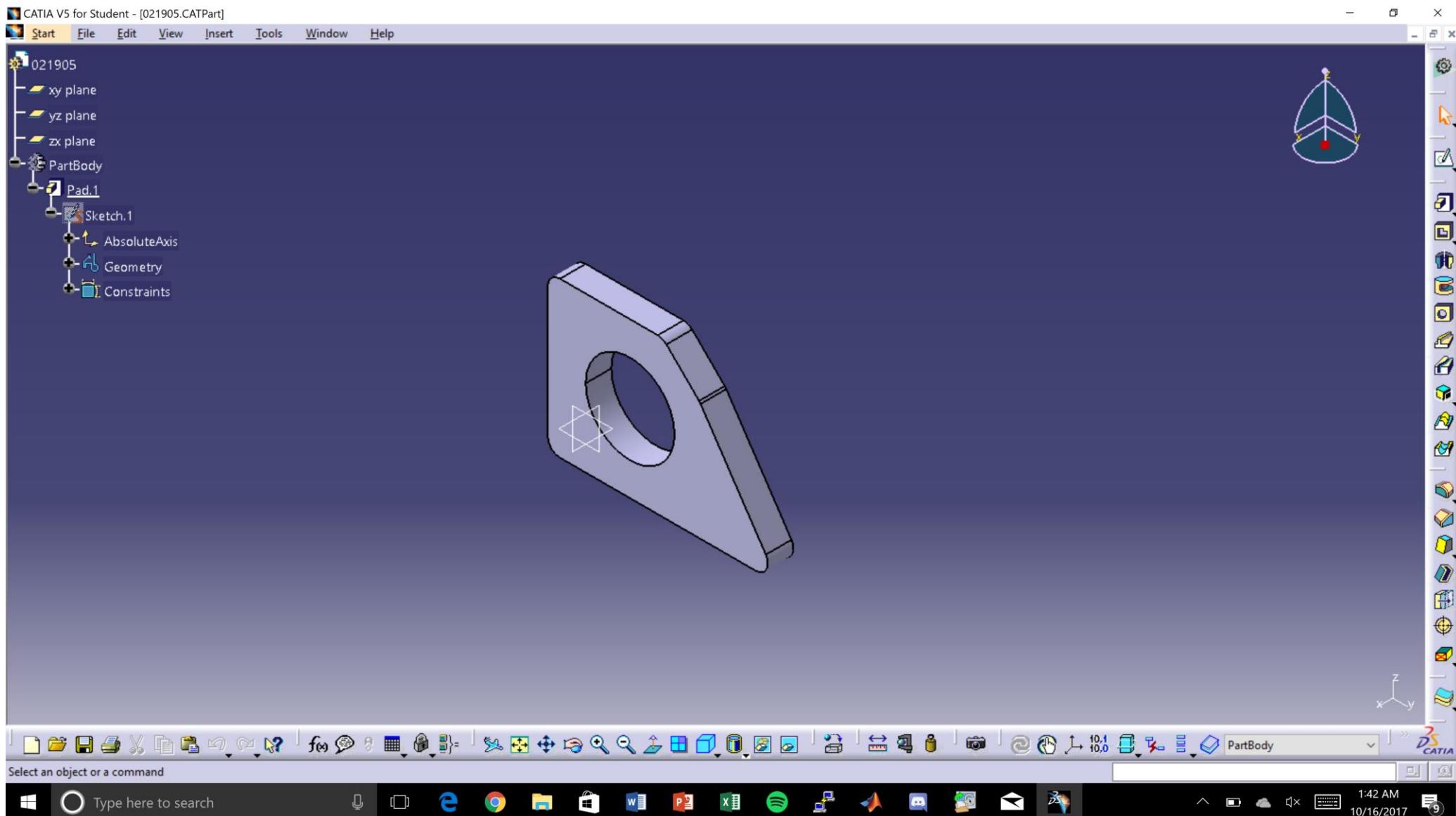
Date: 9/15/12

10
10

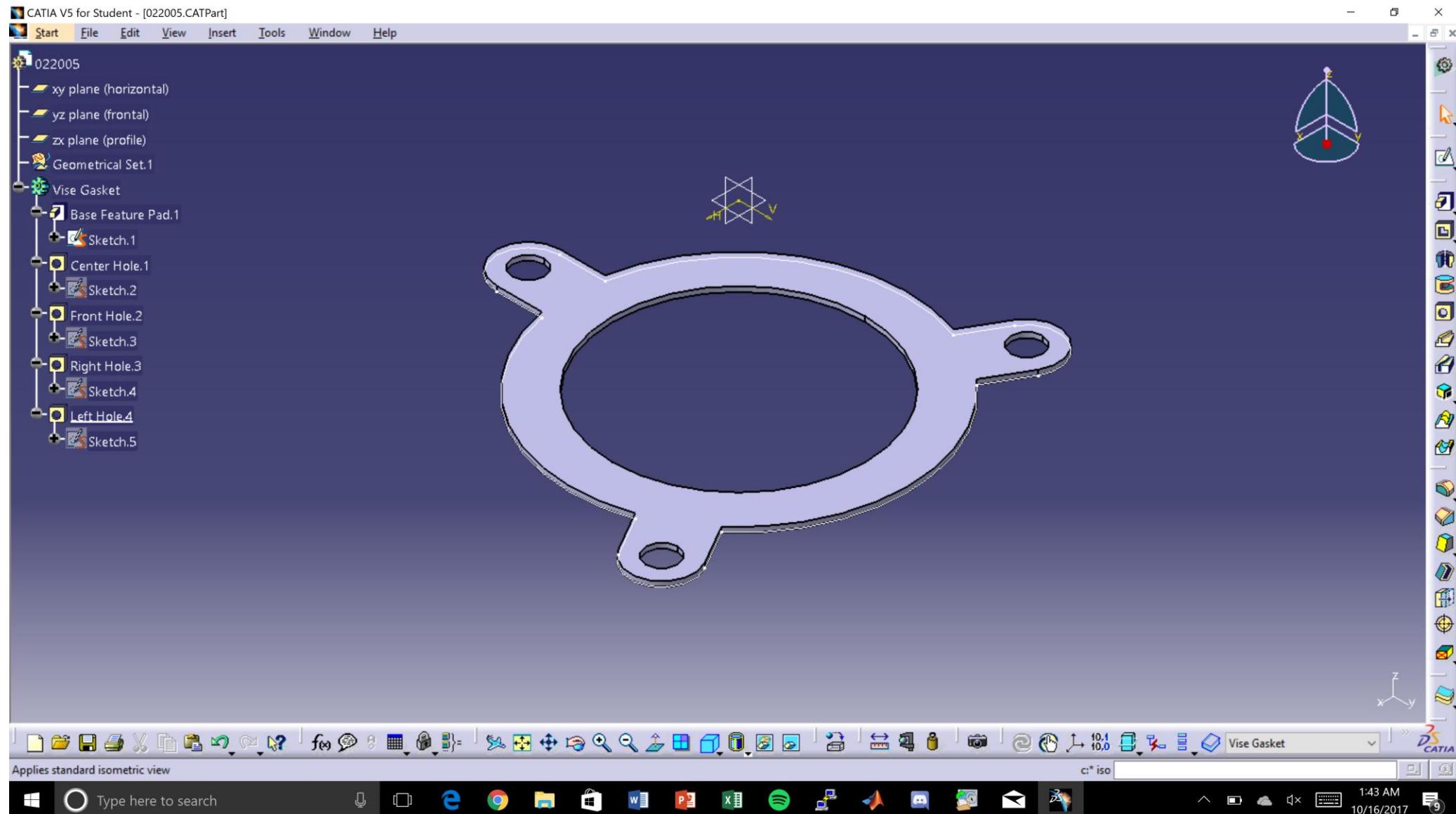
You can cut and paste into Subreddits
- they will keep constraints and anything

You can use specific districts in as you use double clicking on campus with attached
it is easier to move entire towns in state than move own and forest afterwards
many ways to get bonus points by doing it different ways

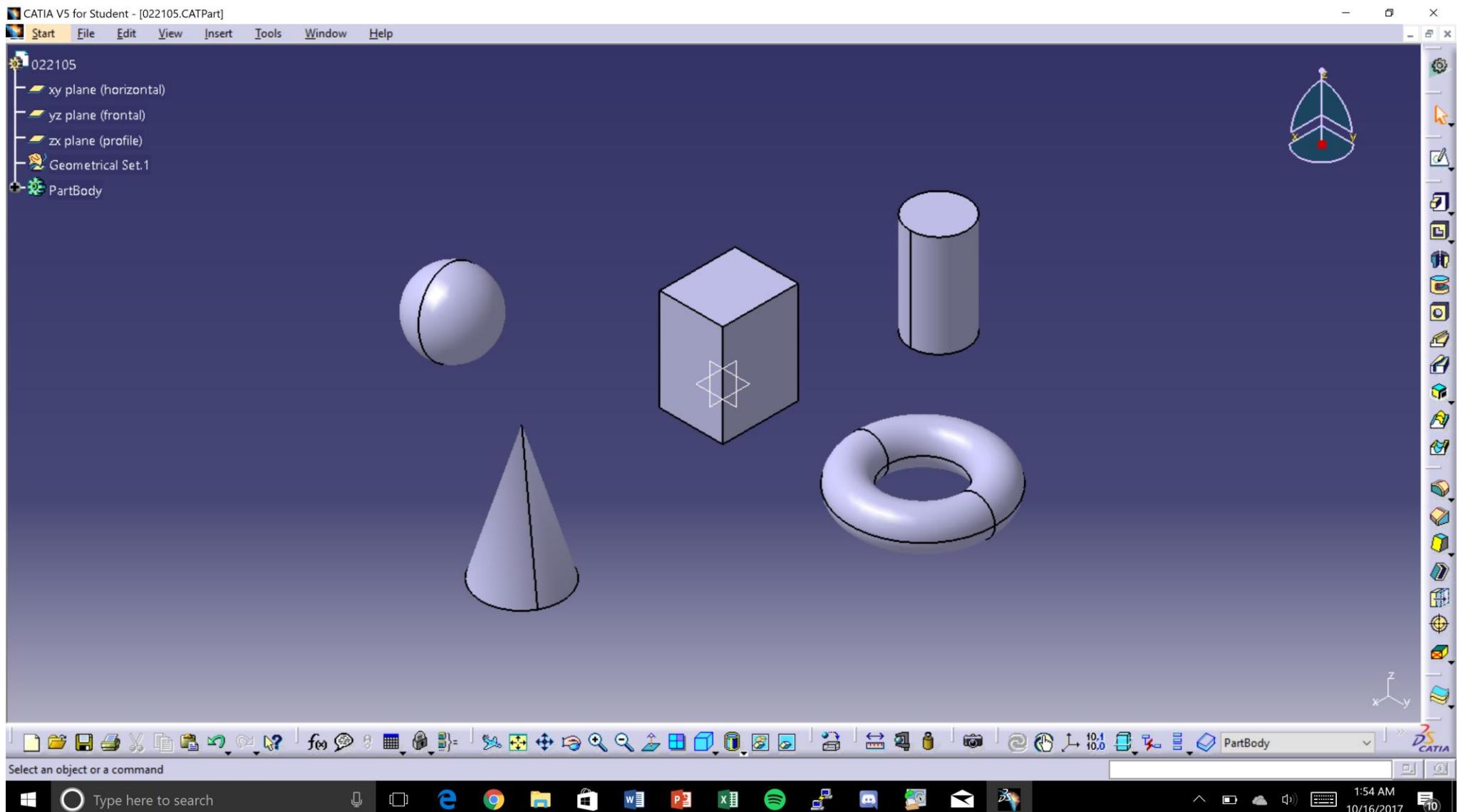
021905



022005



022105



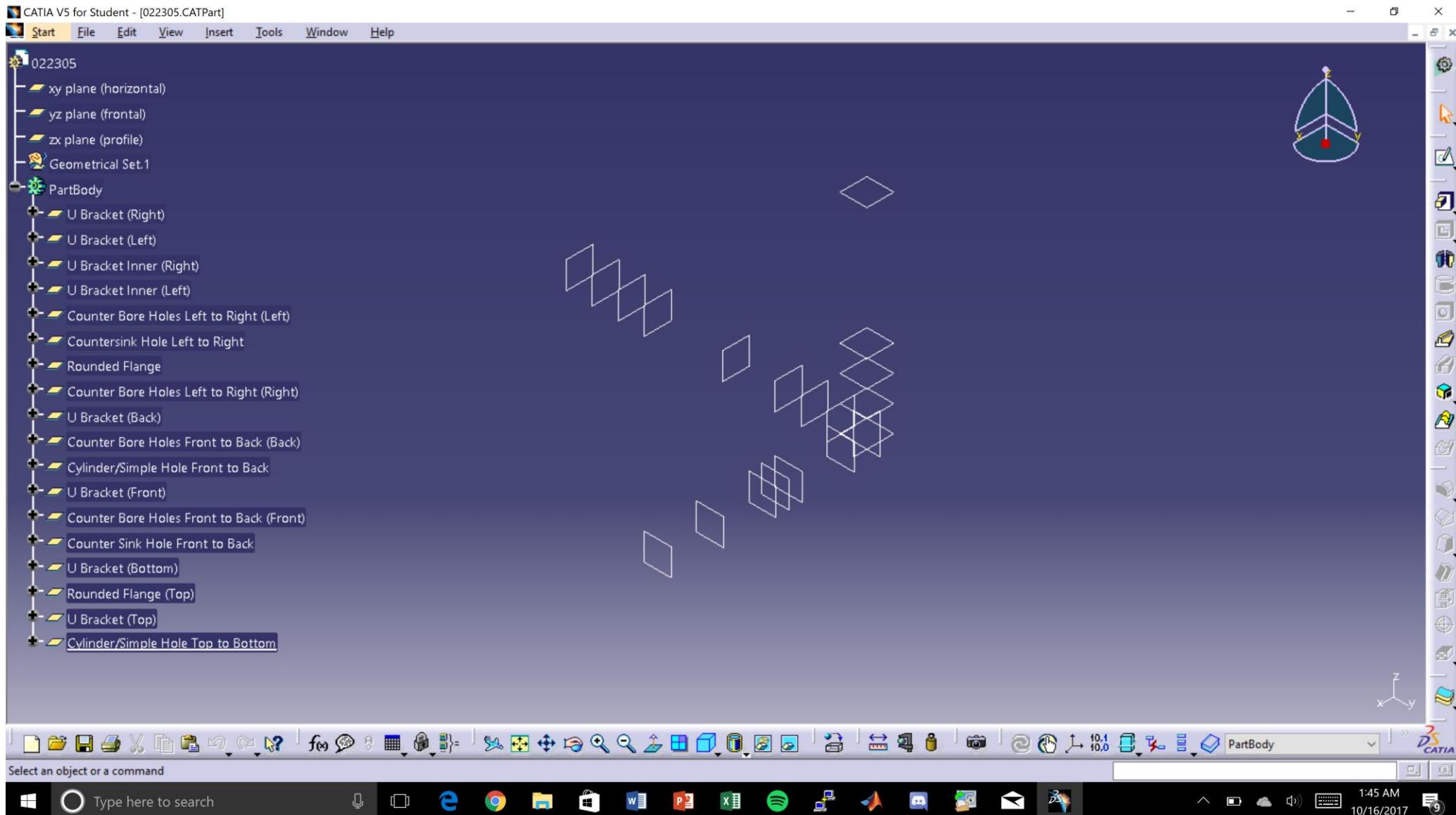
022205

Assignment #: <u>022205</u>	Date: <u>9/20/17</u>
<p>Math 110 assignment 20 to do one of a type of construction that needs to be considered</p> <p>1) Given for an interval $[a, b]$ to choose an equation for that must be solvable \Rightarrow MUST be radians using trig constraints for max + min for multiple constraints check line when radians are set percents</p>	

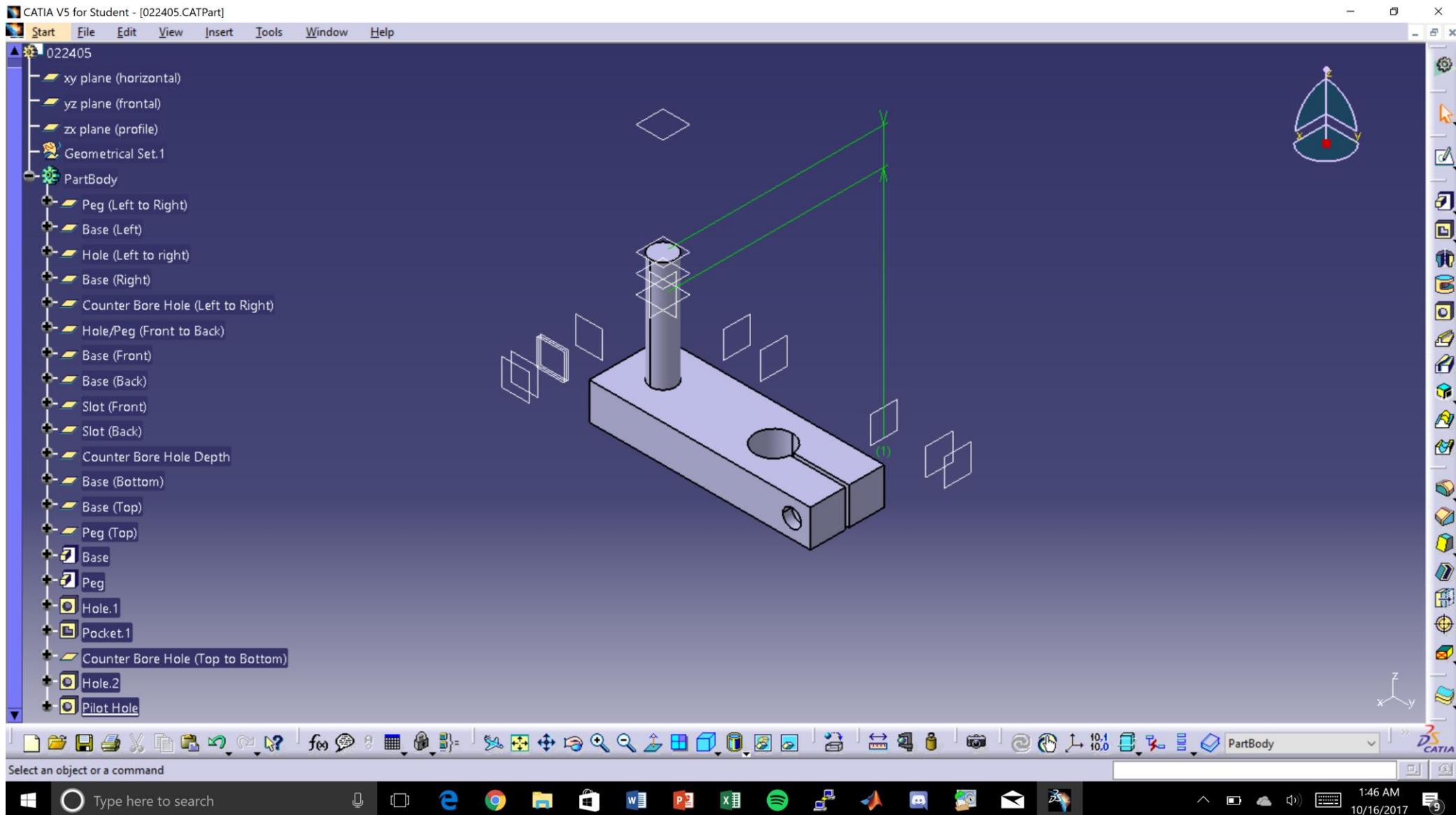
Bolda, Matthew

TXID: 0D742099CM0293218
mbo1@depur.due.edu

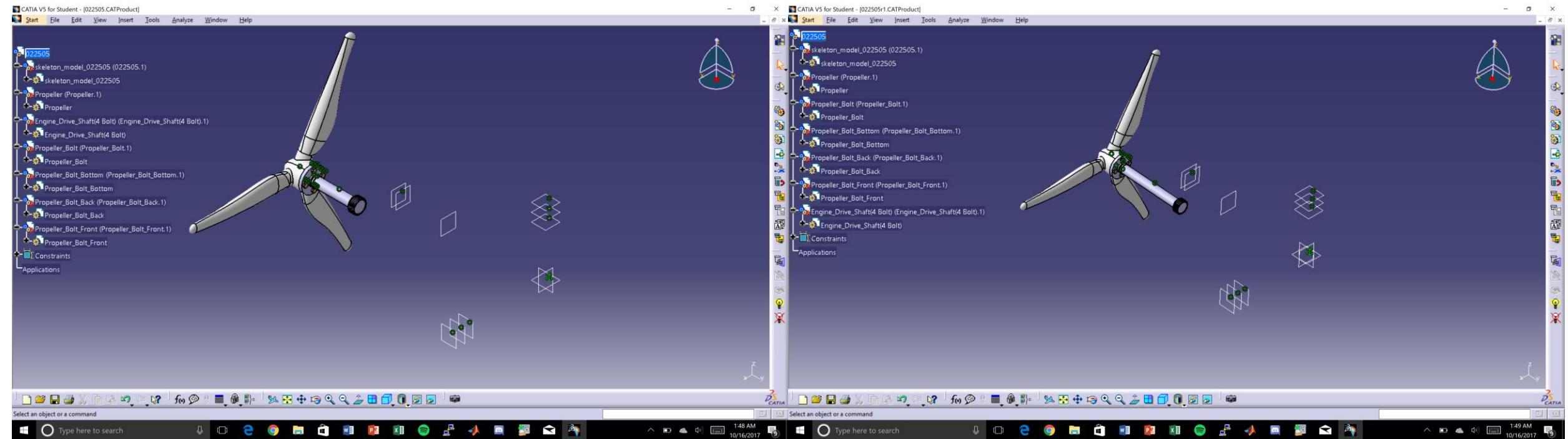
022305



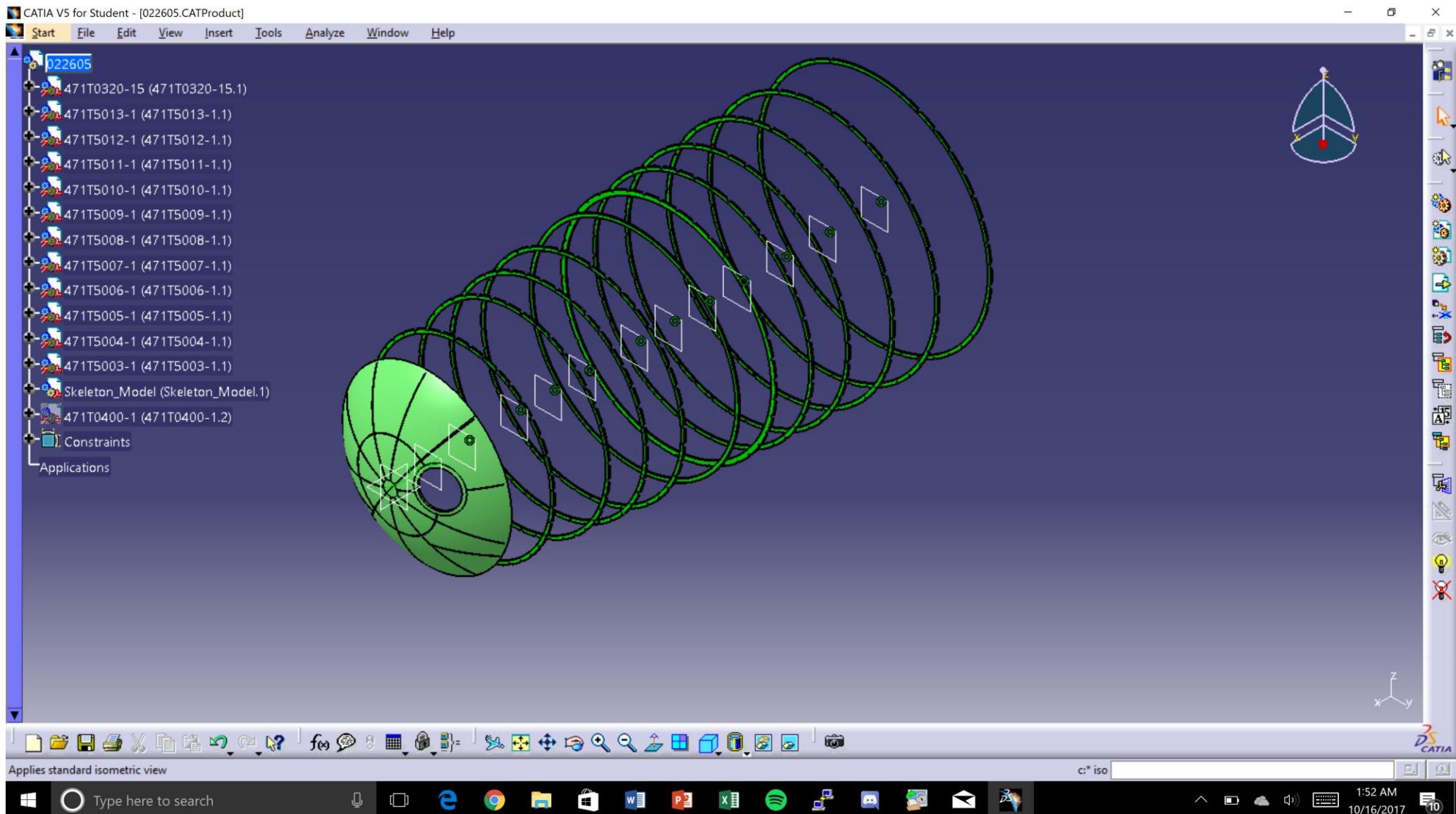
022405



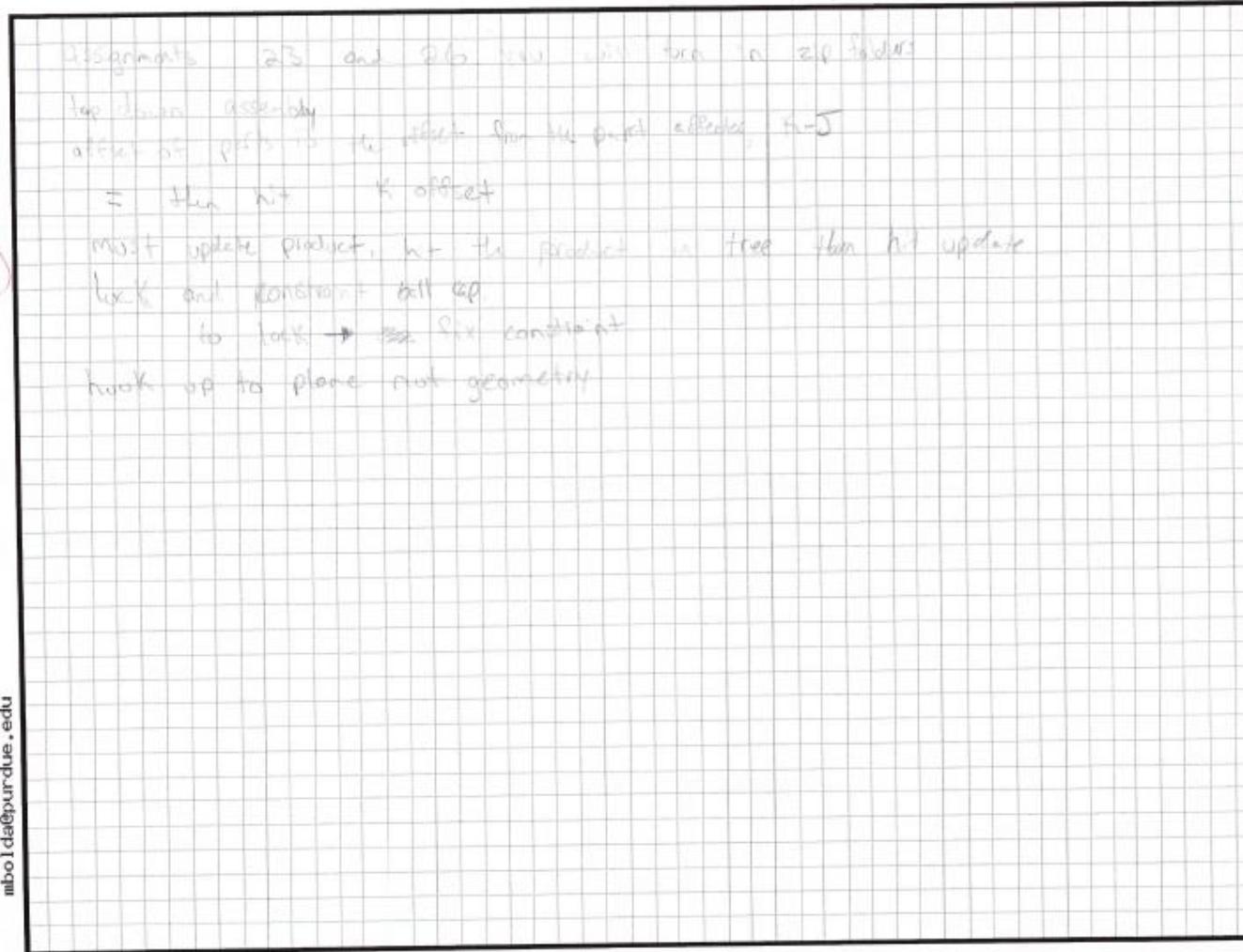
022505



022605



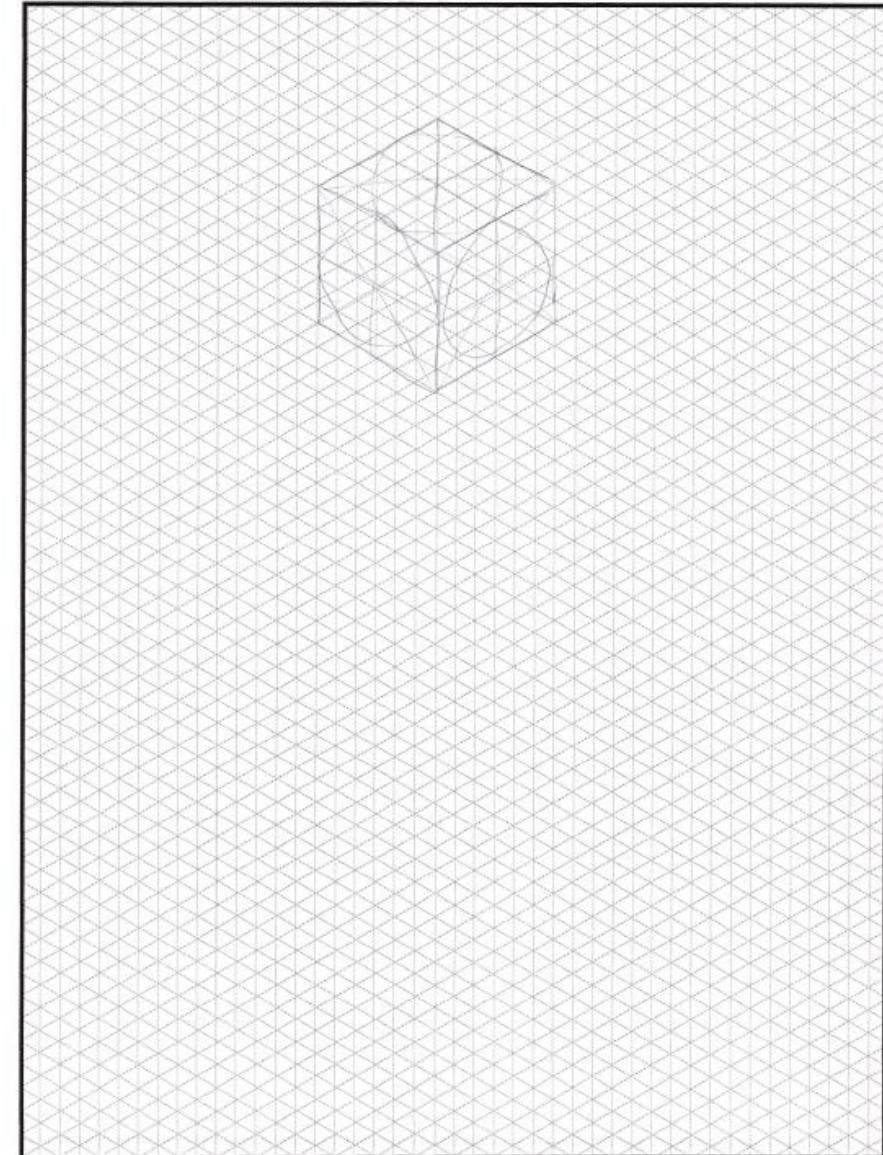
022705



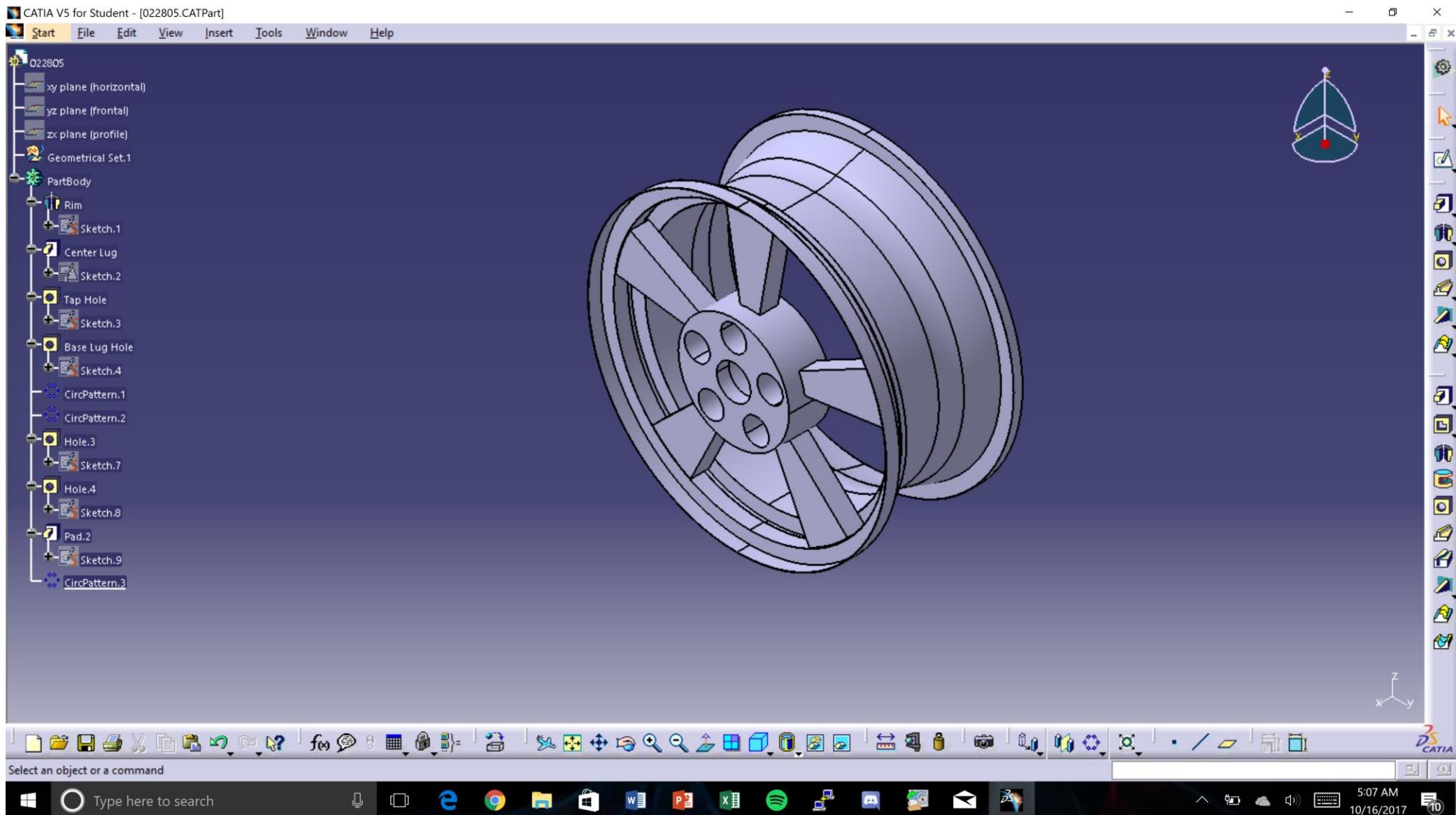
Bolda, Matthew
TXID: 0D742099CN0293718
mbolda@purdue.edu

Assignment #: 02 05
Date: 9/27/17

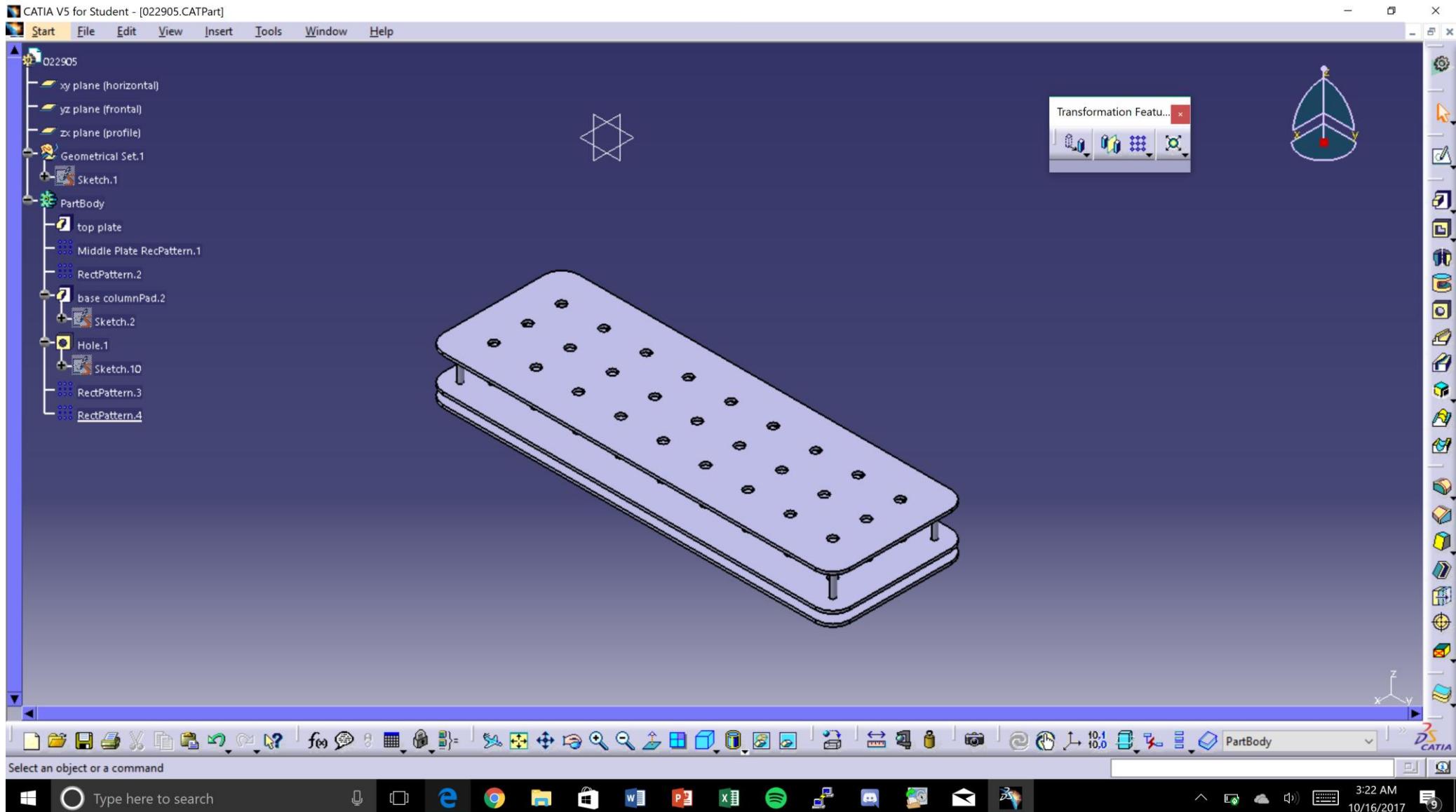
Date: 9/27/17



022805



022905



023005

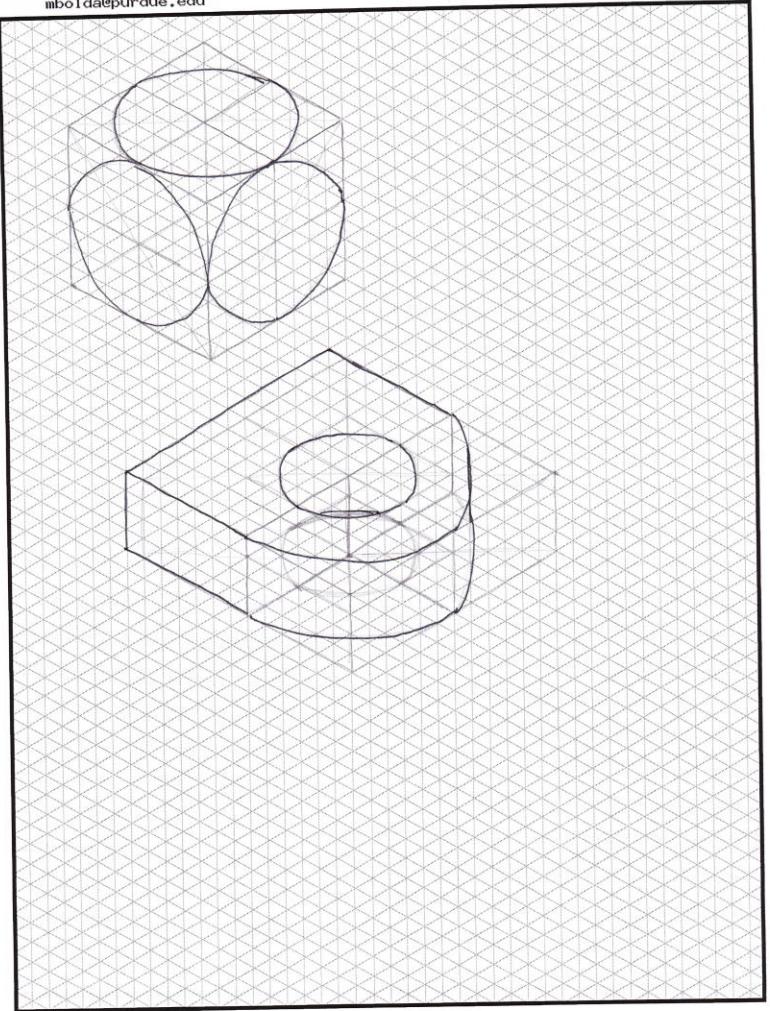
023105

023205

Bolda, Matthew
TXID: 0D742099CN0293718
mbo1da@purdue.edu

Assignment #: 023205

Date: 10/4/18



10/10/2020

CGT 163 - DIGITAL PORTFOLIO - MATTHEW BOLDA

Bolda, Matthew
TXID: 0D742099CN0293718
mbo1da@purdue.edu

Assignment #: 023205
10/4/18

Date: 10/4/18

click #1 with sketch .25 & then 1 instance) = 2 object click top surface, click bottom
axis, then click okay
small circle in top left corner, dimension constraint, then coincident with axis Y constraint
"up to last"
click #1 then edge of top plate "second direction, then reference top plate
circle size .25 in, position sketch, constraints to axis with horizontal and vertical
constraint .375
"up to plane" then click last plate
rectangular pattern instance 3x4 up to plane
Quiz next week on isometric

57

023305

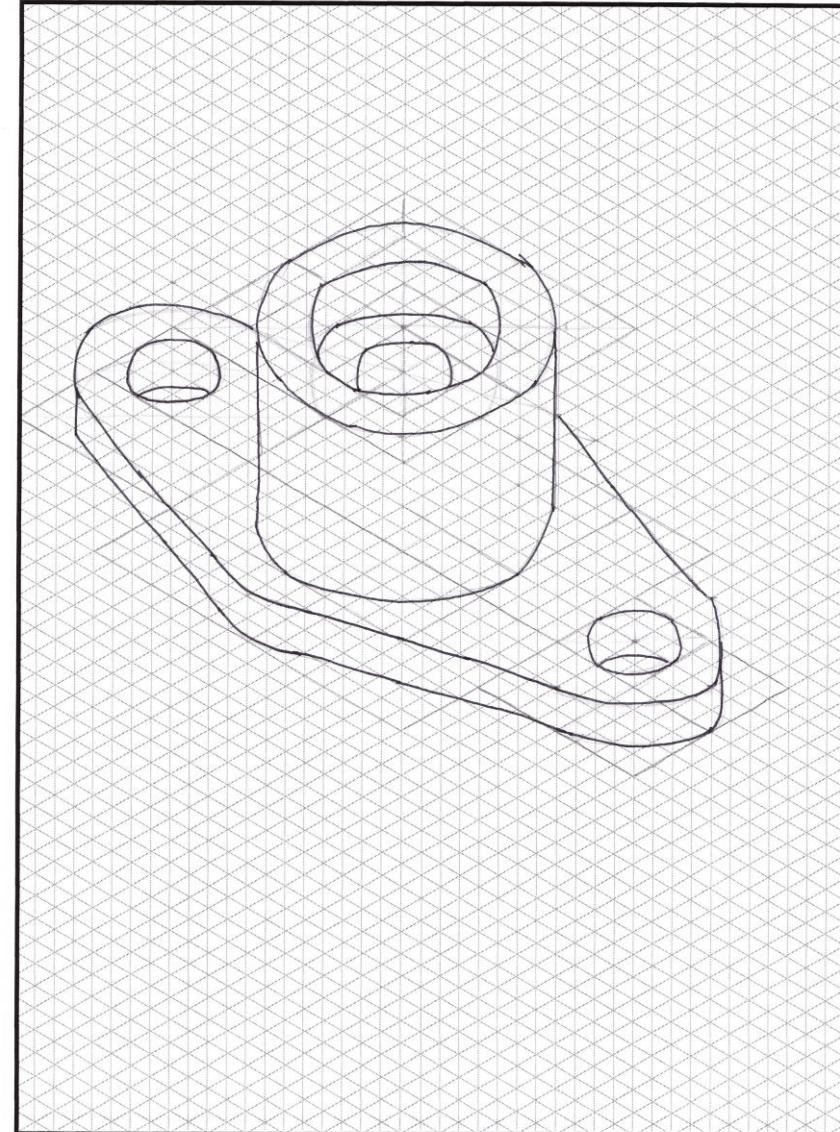
Bolda, Matthew

TXID: 0D742099CN0293718
mbolda@purdue.edu

Assignment #: 023305

10
10

Date: 10/16/17

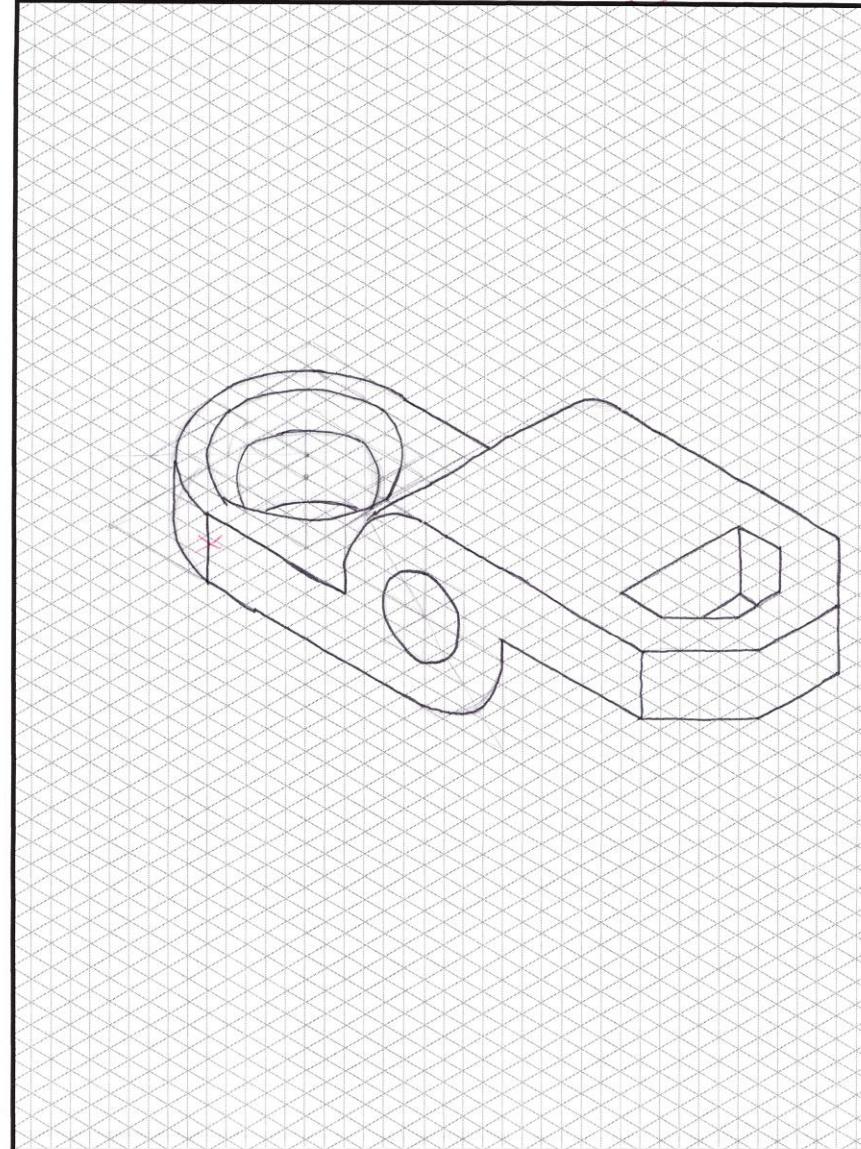


023405

Bolda, Matthew

TXID: 0D742099CN0293718
mbolda@purdue.edu

Assignment #: 023405 (9.5 / 10) Date: 10/16/17



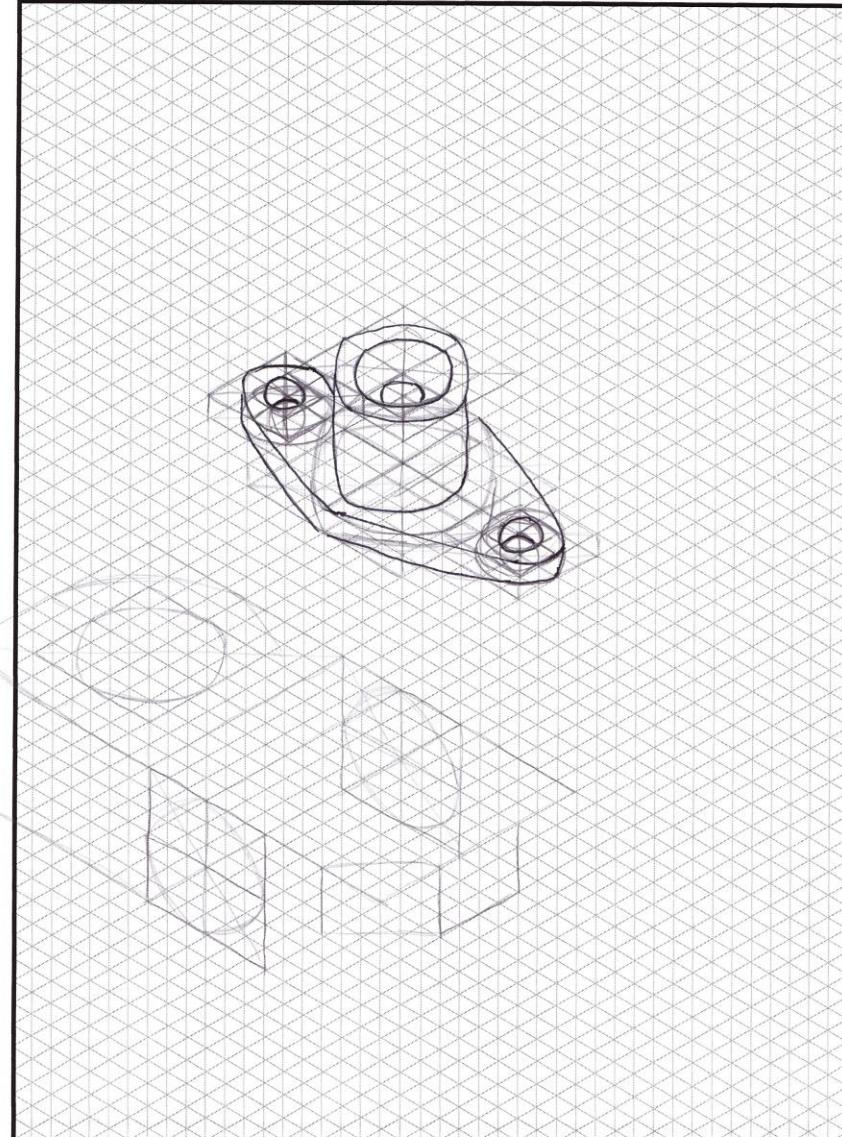
023505

Bolda, Matthew

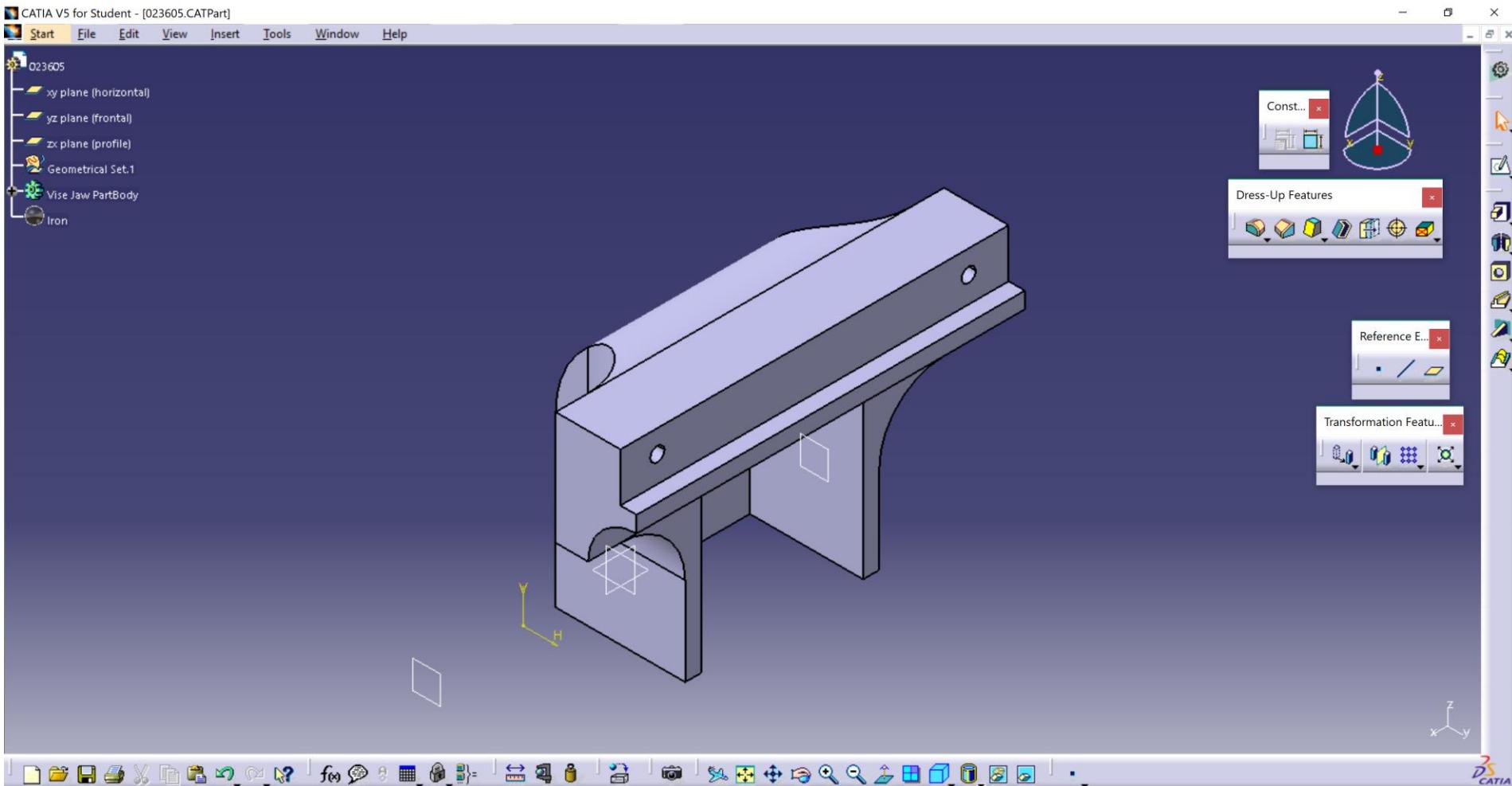
TXID: 0D742099CN0293718
mbolda@purdue.edu

Assignment #: 023505

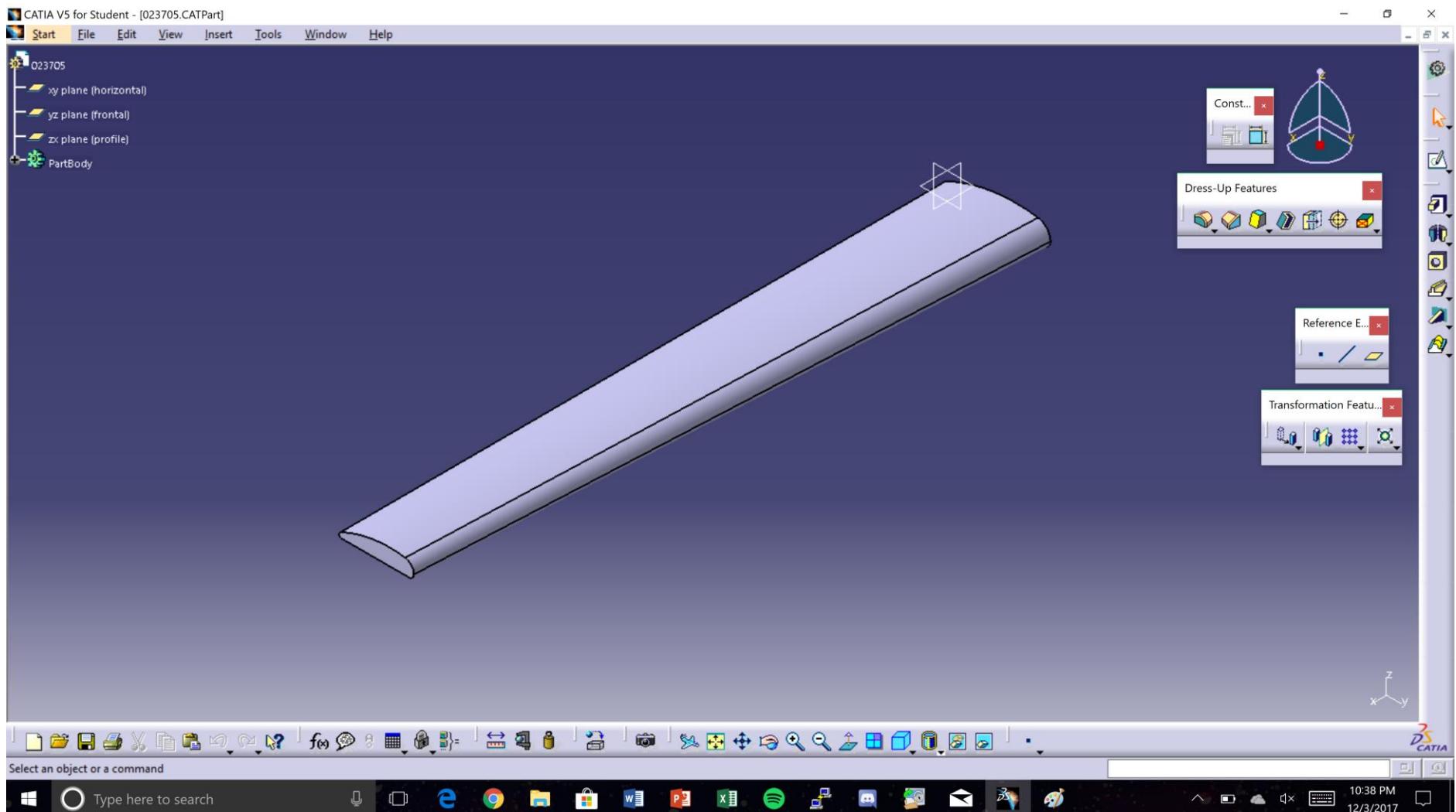
Date: 10/11/17



023605



023705



023805

Bolda, Matthew
TXID: 0DZ42099CN0293718
mbo1da@purdue.edu

Date: 10/15/17

Assignment #: 023805

Start working on final project, some of it will be due in 2 weeks
copy and pasting doesn't work very simply like it should
- must go into sketch, ctrl + left click to select

If error right click closing point and hit replace and switch so they are across from ^{each other}
this is because it tries to twist the image over itself and causes problems
once done correctly, you can rotate the image quickly, helpful for my design

023905

Research Purpose:

This study is gathering information for use on a Master's thesis at Purdue University. The data gathered from the two parts of the study will be used to find differences between scores and time taken to model. The individual models submitted will be examined to determine how many steps it took for successful completion of each modeling task. If you wish to know more about this study, please send an email to jzahner@purdue.edu.

The owner of the thesis that the information will be used for is denoted below, along with contact information.

Thesis Owner: Jessie Zahner jzahner@purdue.edu
Committee Chair: Dr. Nathan Hartman nhartman@purdue.edu
Committee Member: Dr. Connolly Patrick connollyp@purdue.edu
Committee Member: Dr. Darryl Schneider dws@purdue.edu

Thesis title: A Study of Spatial Ability and 3D Modeling Capabilities

Disclosure of Privacy:

In collecting the MCD and MOT data from you, you will be submitting your name, scores for the spatial ability test, the models you have completed, as well as demographic data. The models you create will be associated with tags inside of Catia that link the model back to your name. This will be used to ensure that the models are unique to each person. When all models and scores have been collected, names will be cleared from all files and replaced with a participant number. No names will be associated with the data that will be produced in this thesis. All files and information gathered will be kept until the conclusion of the thesis, whereupon they will be archived and stored for other researchers to access if more tests need to be run on the data.

Demographic Data

This demographic data is being collected for use in statistical measures associated with this study. For example, if students with more years of modeling experience have higher MCT scores, then that is a correlation that can be drawn upon in terms of the results of the study. Please fill out the text boxes next to each question. Please type the letter of your choice into the box.

What is your current year in school?

- A) Freshman
- B) Sophomore
- C) Junior
- D) Senior
- E) Graduate Student

 B

How many years of modeling experience do you have?

- A) Less than one year
- B) One-Two Years
- C) Two-Three Years
- D) Three-Four Years
- E) More than 4 years

 A

What is your ethnicity origin (or race)?

- A) White
- B) Hispanic or Latino
- C) Black or African American
- D) Native American or American Indian
- E) Asian / Pacific Islander
- F) Other

 A

Please specify your major (spell out all acronyms):

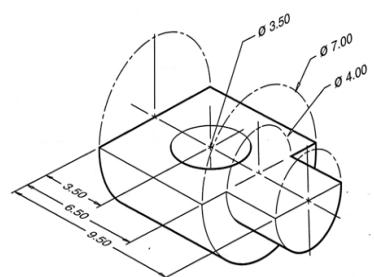
First-Year Engineering (FYE)

Modeling Task

Please complete the following exercises as quickly as you can while avoiding error. Please time yourself for each individual section of this task; at the end, you should have three times recorded. These tasks will utilize Catia and ask that you create models. After each individual task please reset your timer. Please create all models in inches.

Task 1 Assignment 40)

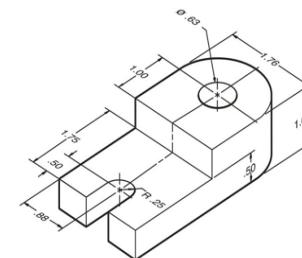
Using Catia, model the following in inches:



Time Taken: _____ 27 minutes _____

Task 2 (Assignment 41)

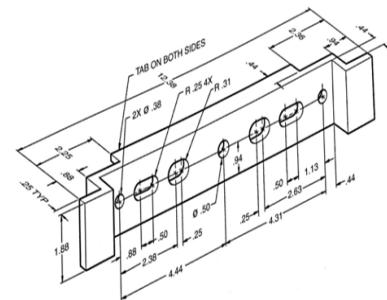
Using Catia, model the following in inches:



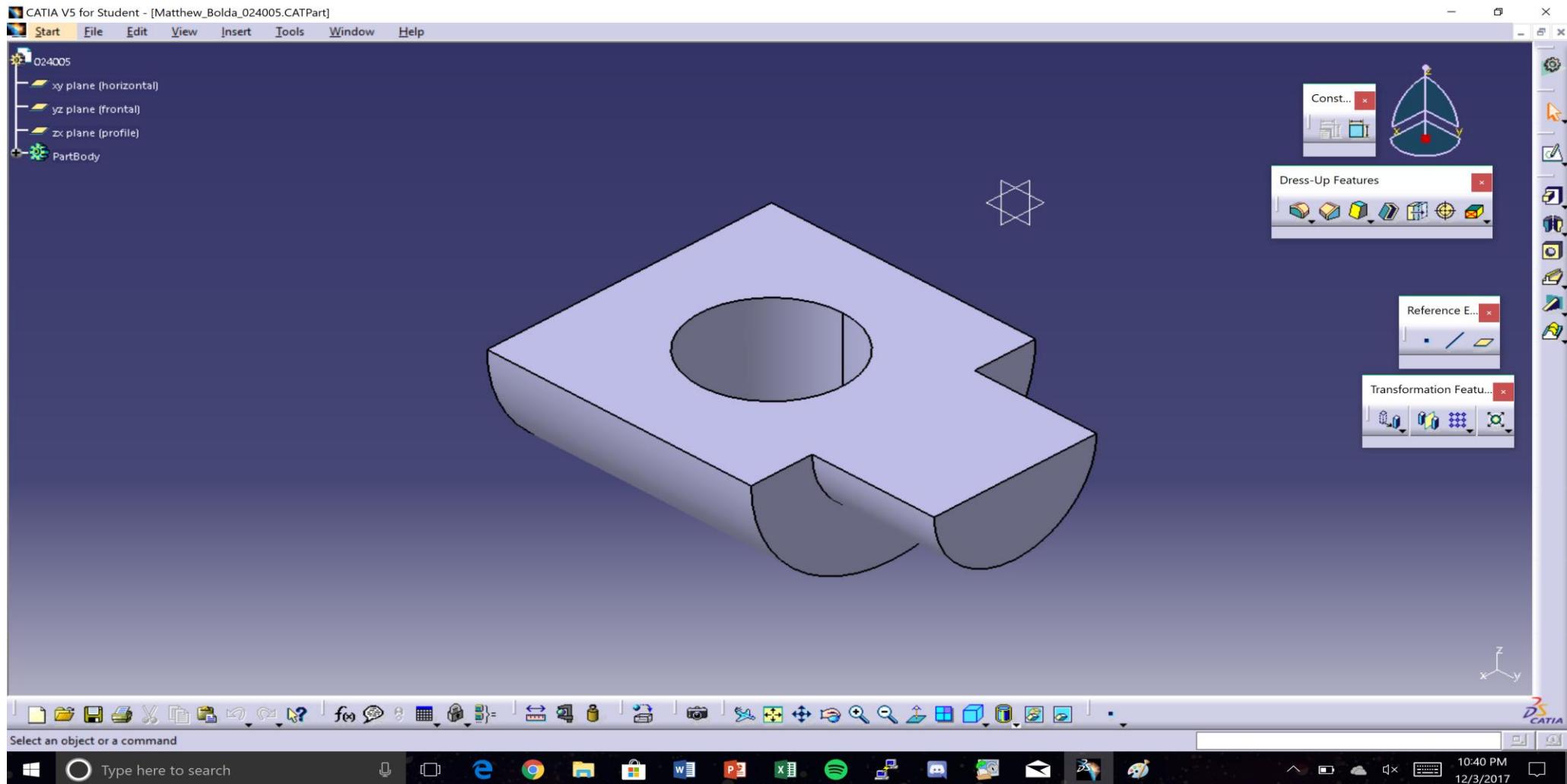
Time Taken: _____ 35 minutes _____

Task 3 (Assignment 42)

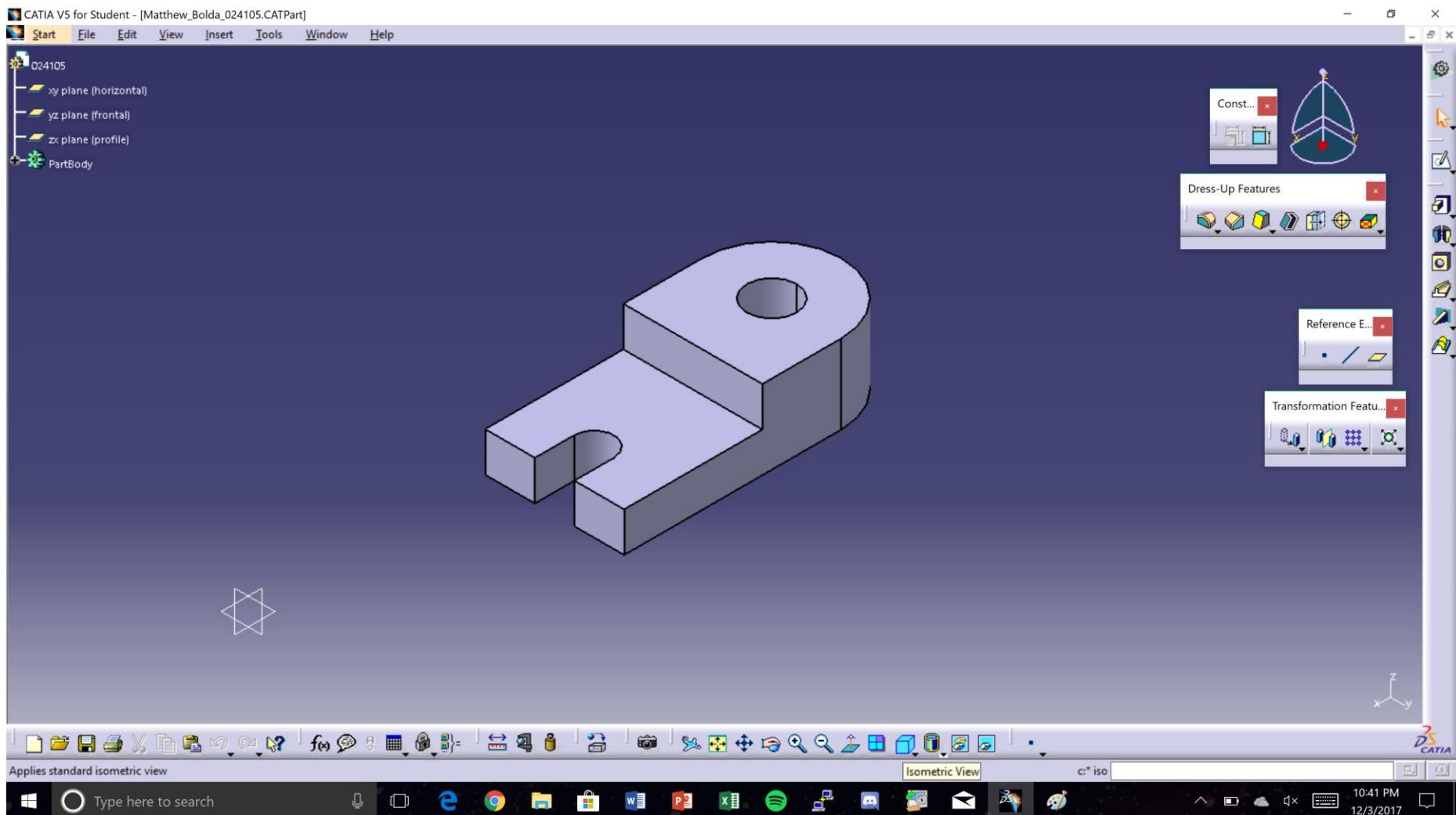
Using Catia, model the following in inches:



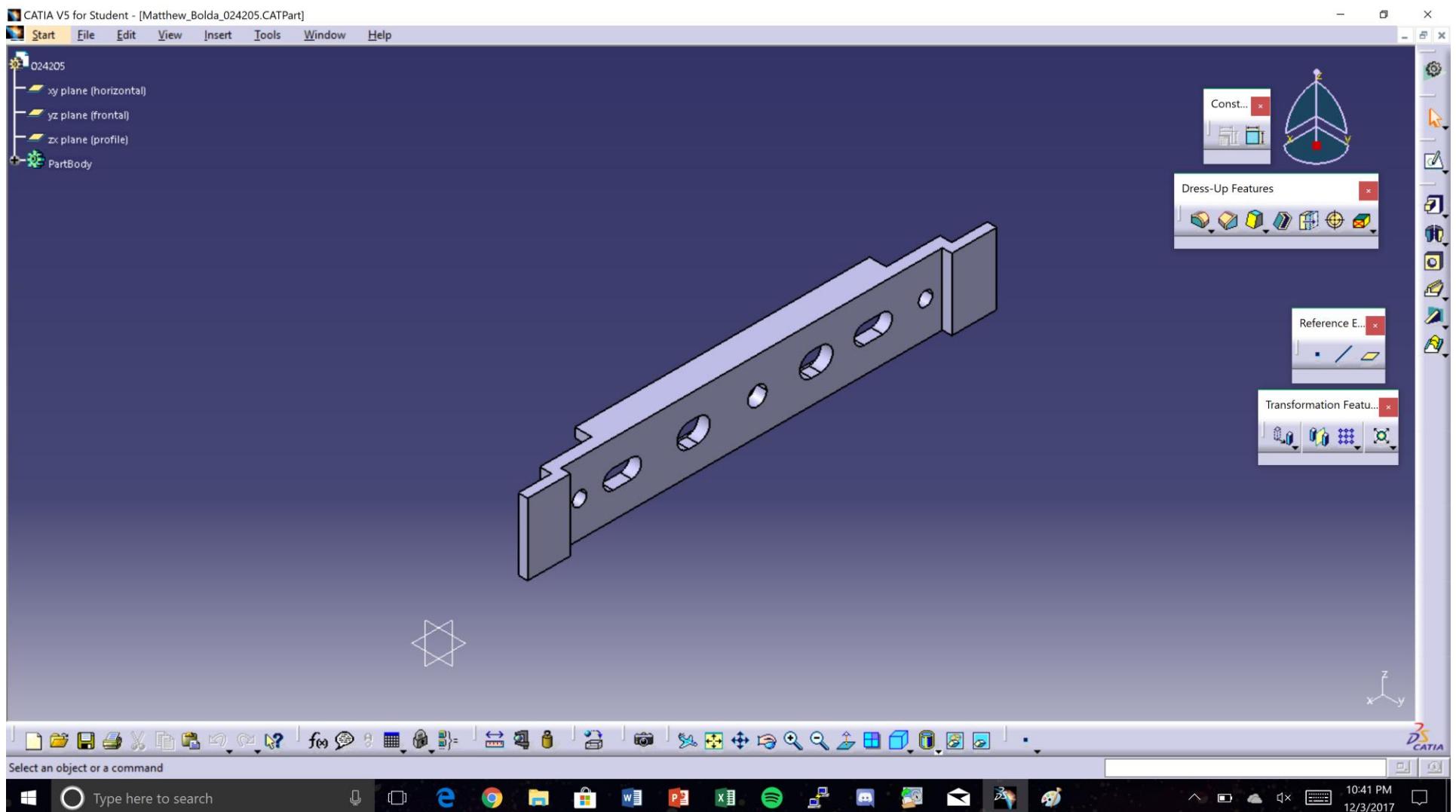
024005



024105



024205



024305

Bolida, Matthew

TXID: 0D742099CN0293Z18
mbo1da@purdue.edu

Assignment #: 02 13 05

Date: 10/25/17

16/10

ECO - engineer change order

- may want to change for safety, design flaw, or aesthetic renovation

- ANSI - American national standards institute

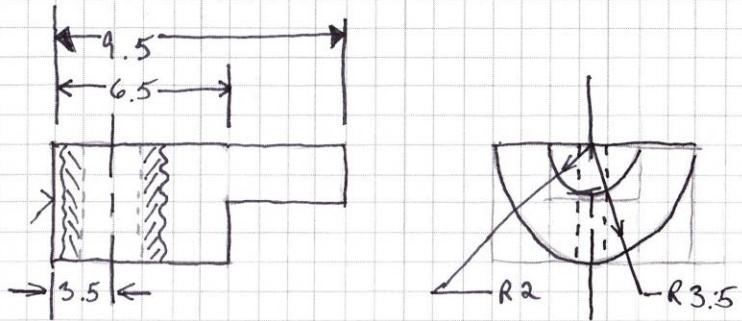
ISO - International system of units

Look at the part. What do you do with that part? Where is the origin?

Dimension the different features

Size positive geometry

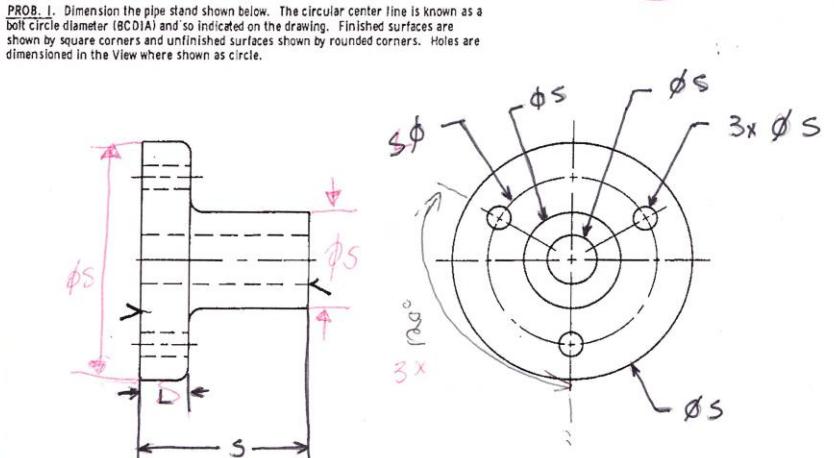
GDT - geometric dimensioning and tolerancing



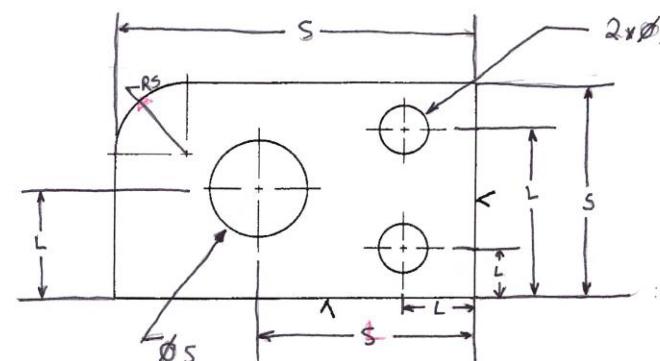
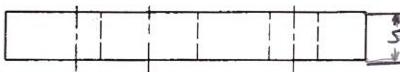
024405

BOLDA, MATTHEW

(7/10)

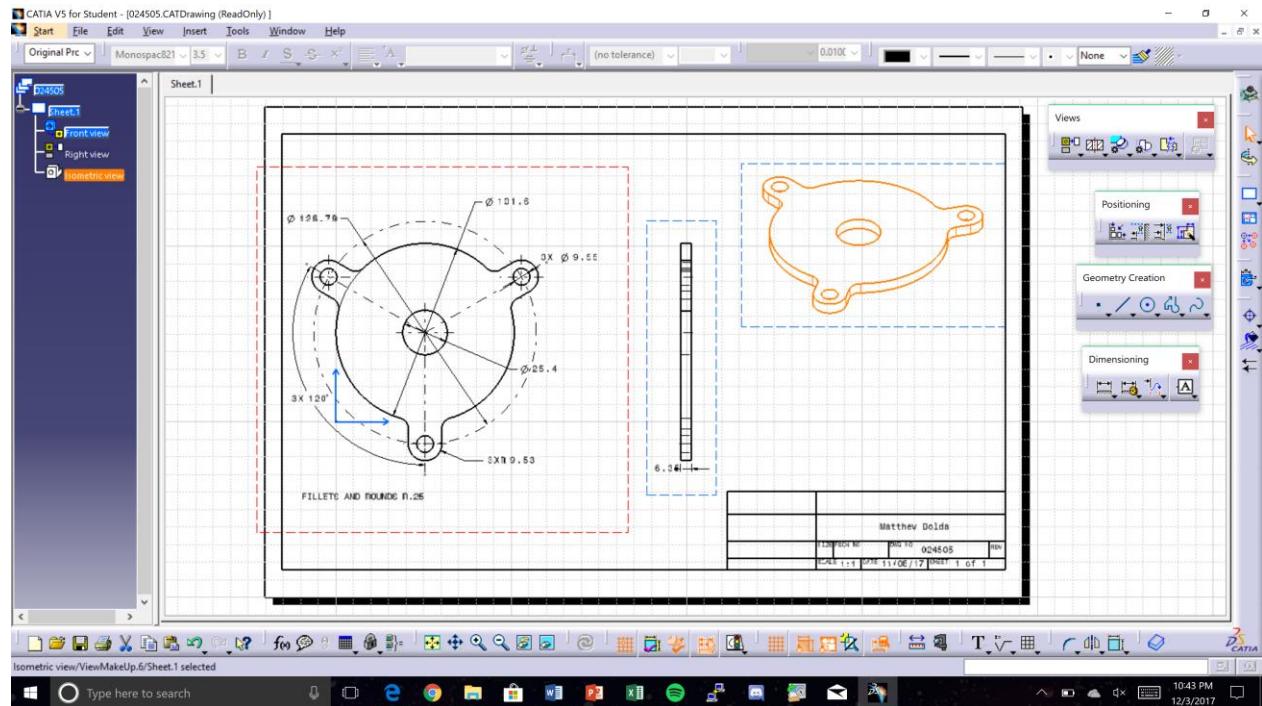
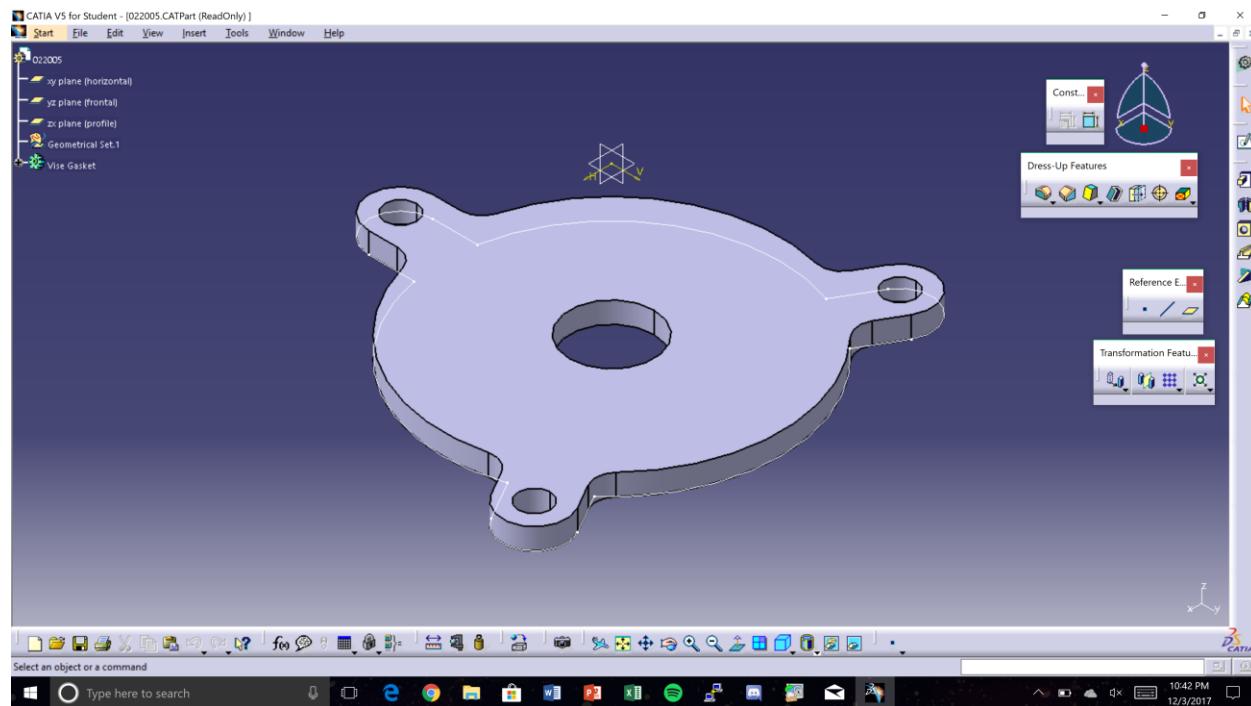


PROB. 2. Dimension the stop block shown below. It is common practice to locate holes with respect to each other after the location of one has been established from a finished surface, if available.

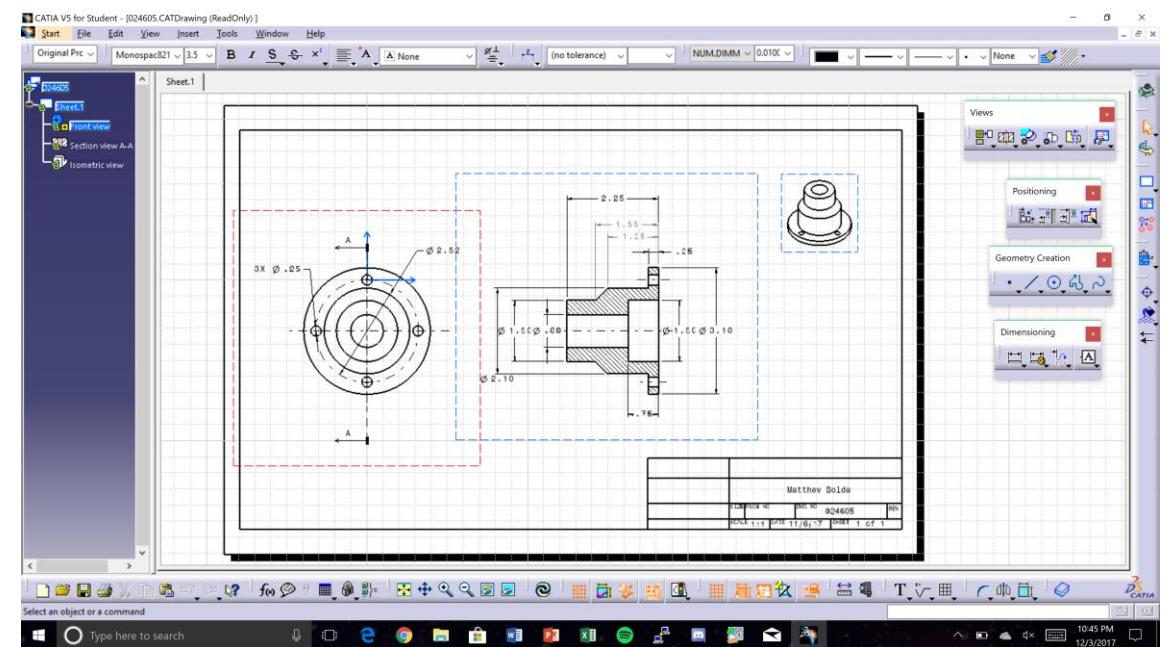
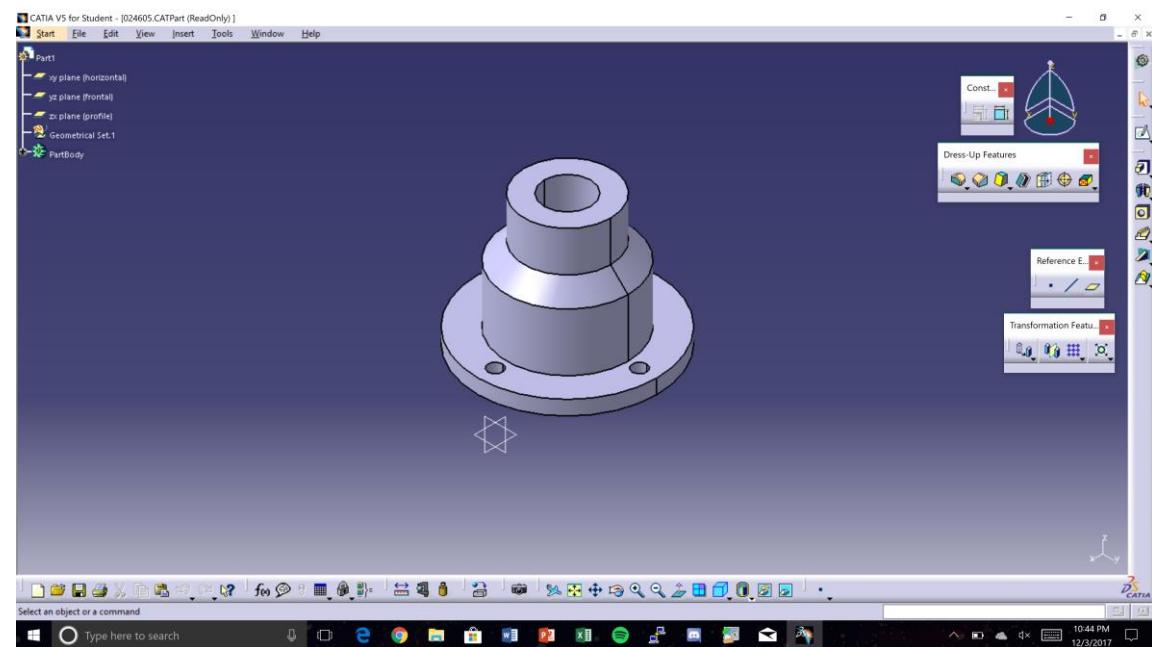


PURDUE UNIVERSITY DEPARTMENT OF TECHNICAL GRAPHICS SCHOOL OF TECHNOLOGY				SCALE
LAST NAME	INITIALS	DATE	CODE NO.	GRADE PER. NO.
Bolda	M	11/8/17	024405	
				DRAWING NO. 60AL306

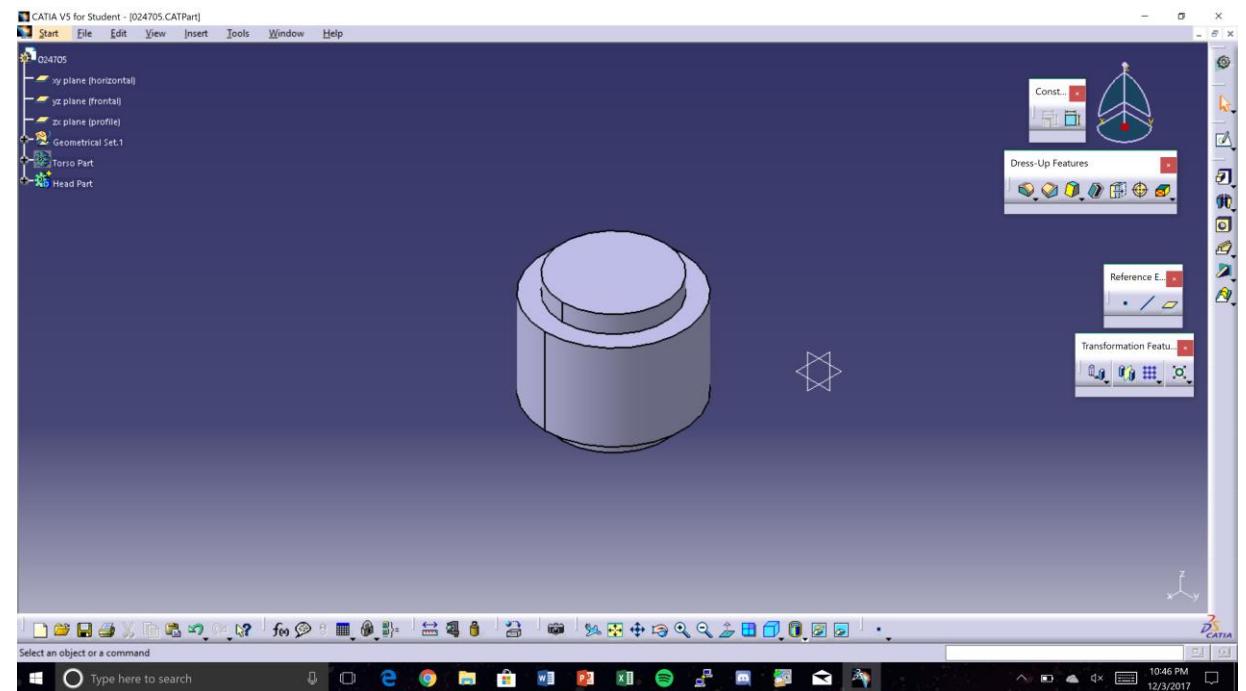
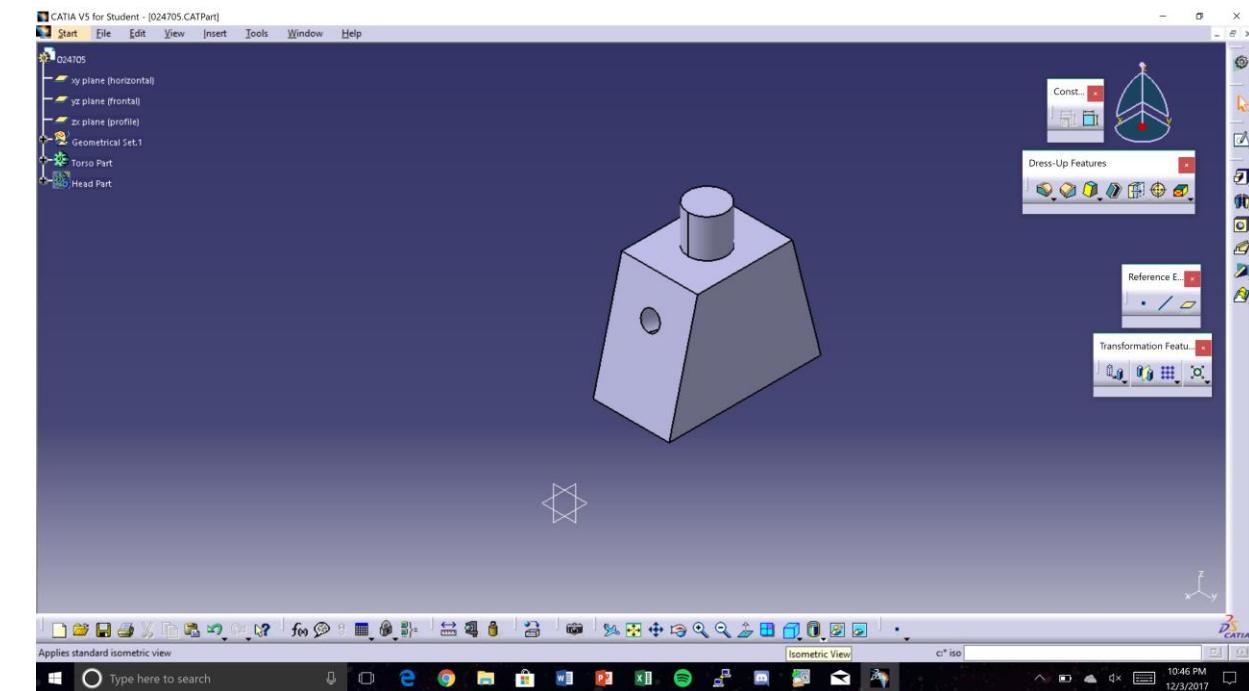
024505



024605



024705



024805

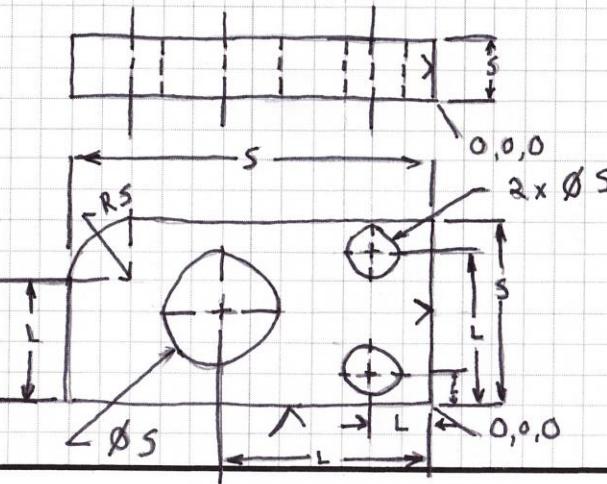
Bolda, Matthew

TXID: 0D242099CNO293718
mbo1da@purdue.edu

(P)
14

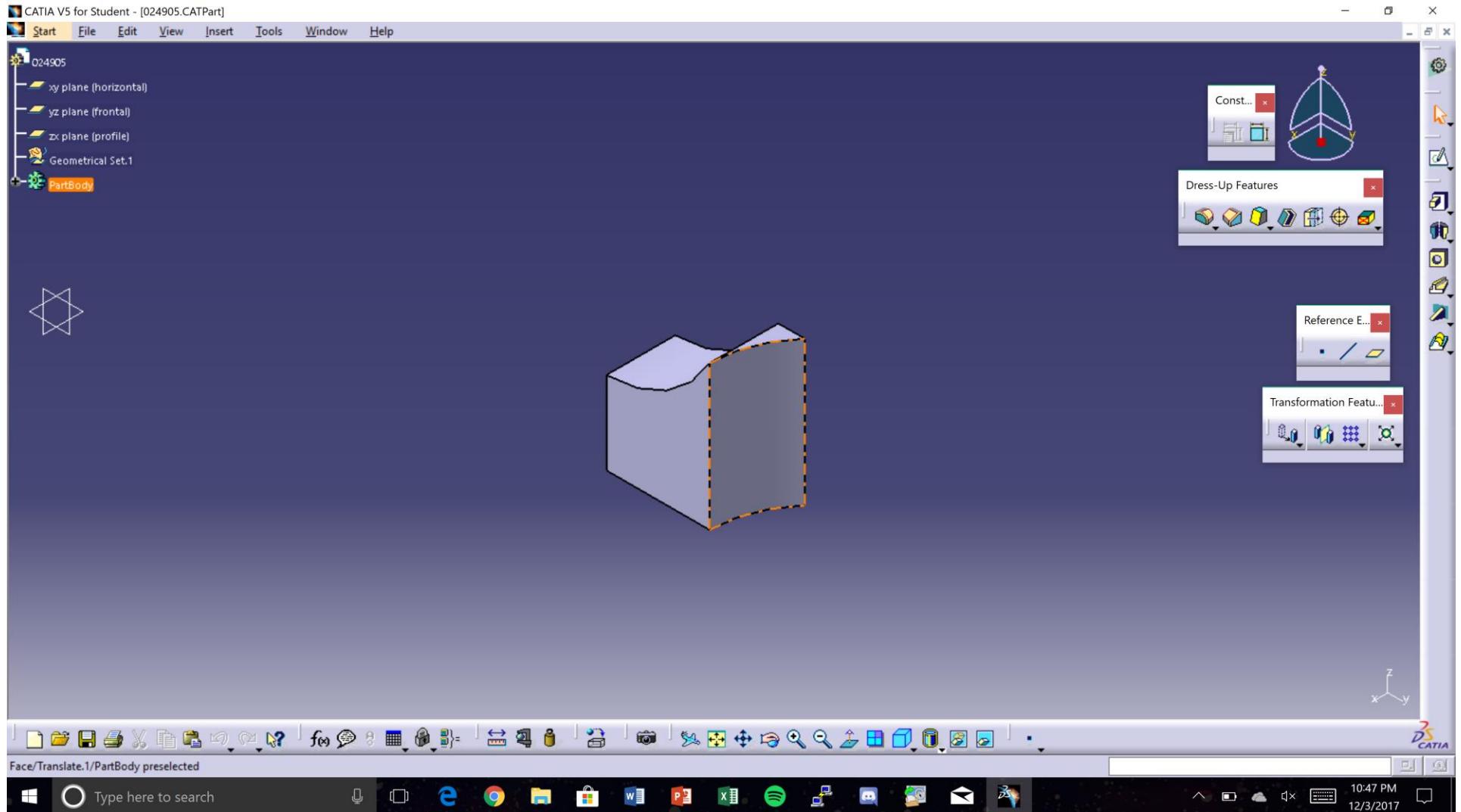
Assignment #: 024805

Date: 11/11/17

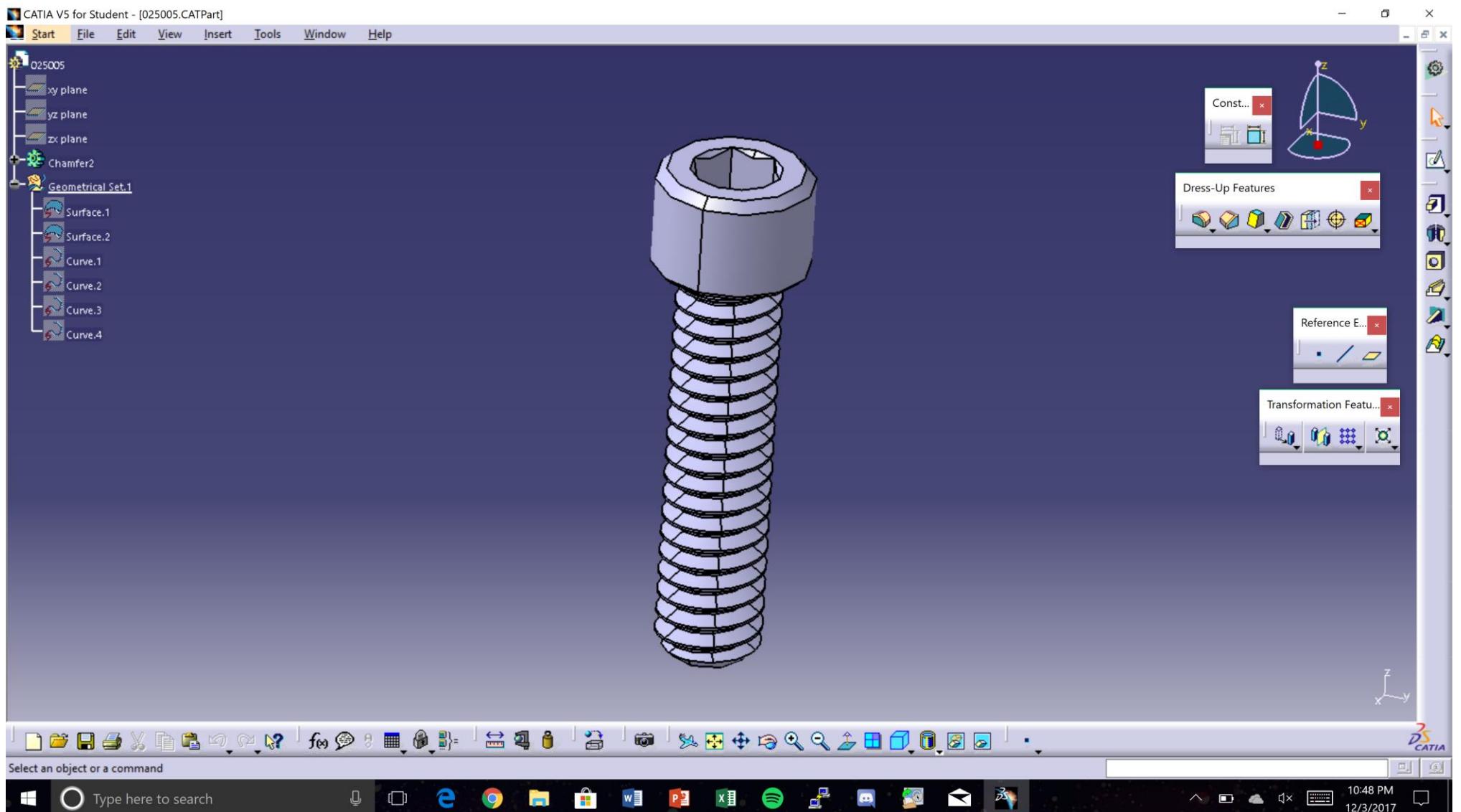


Look at the object
size positive geometry
- make dimensions
Size negative geometry
decide origin

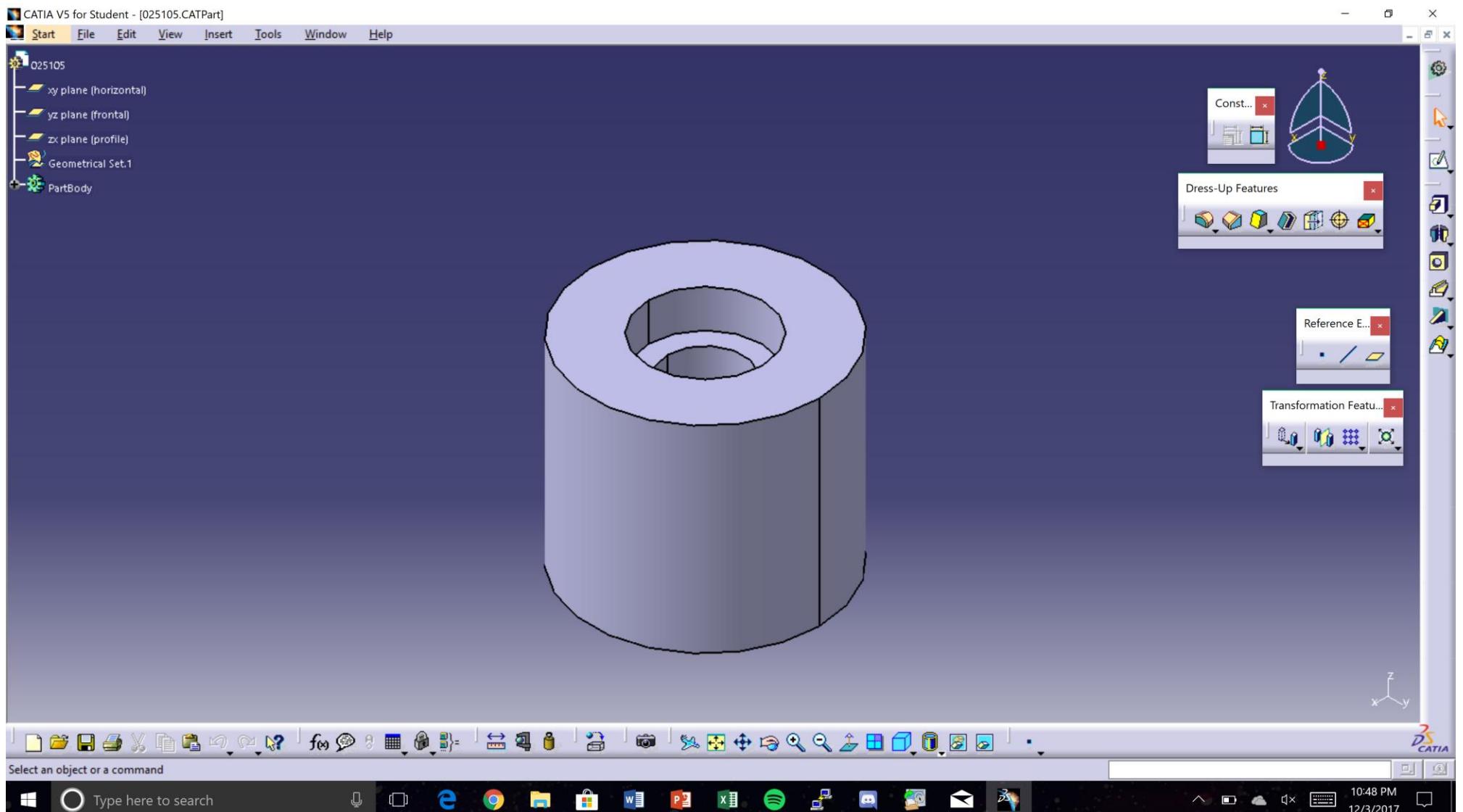
024905



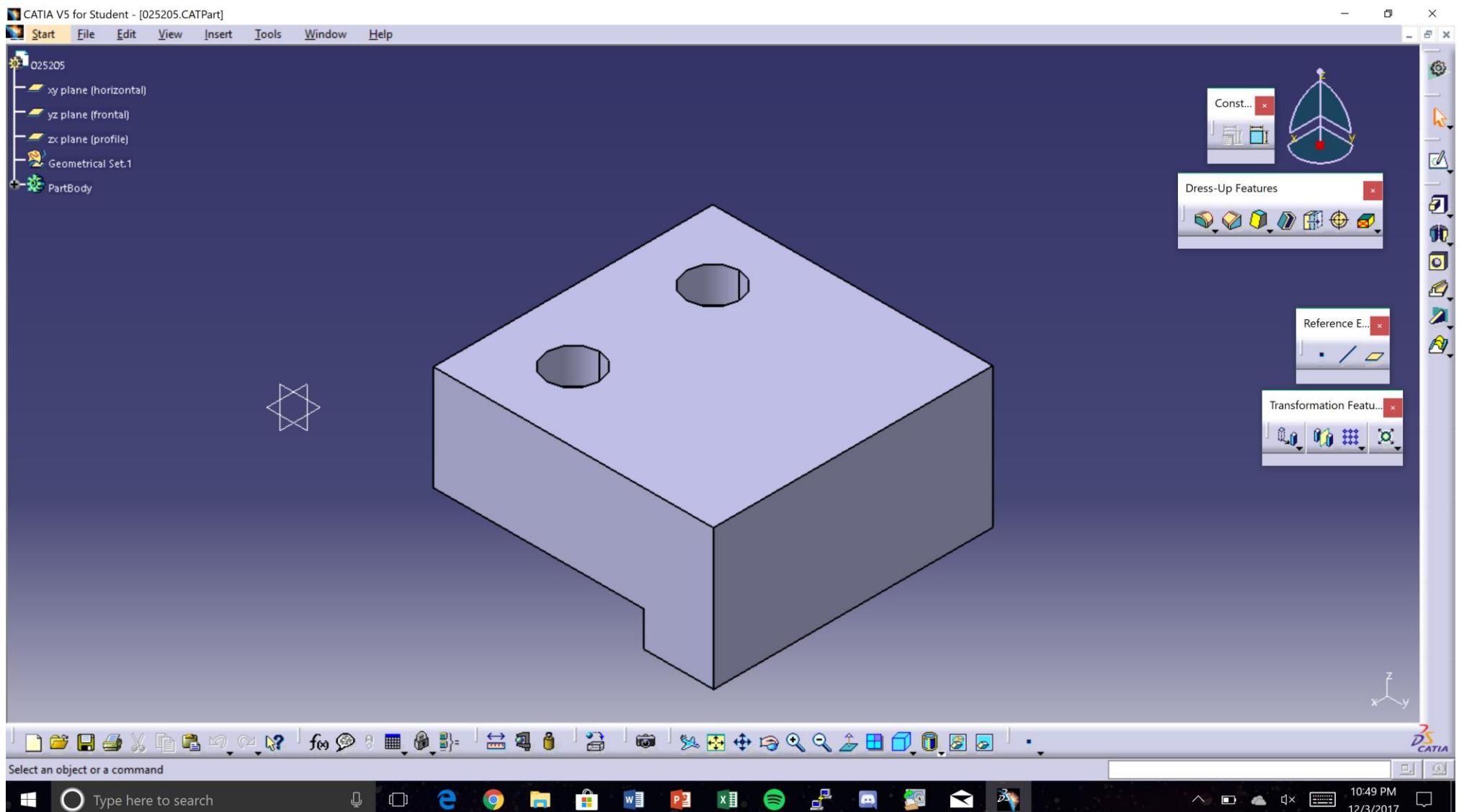
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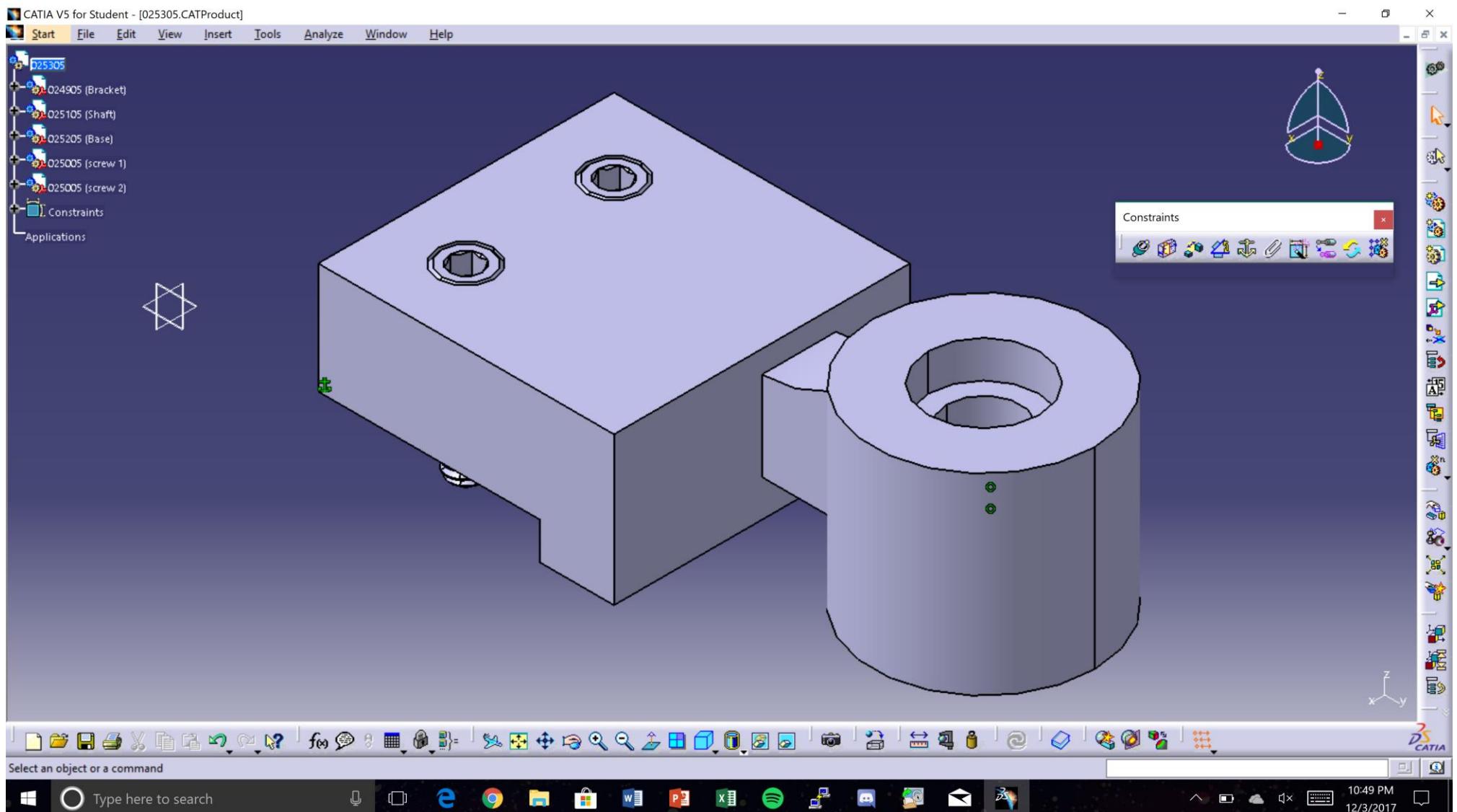
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025205



025305



025405

BOLDA, MATTHEW

TXID: 0D742099CN0293Z18
mibolda@purdue.edu

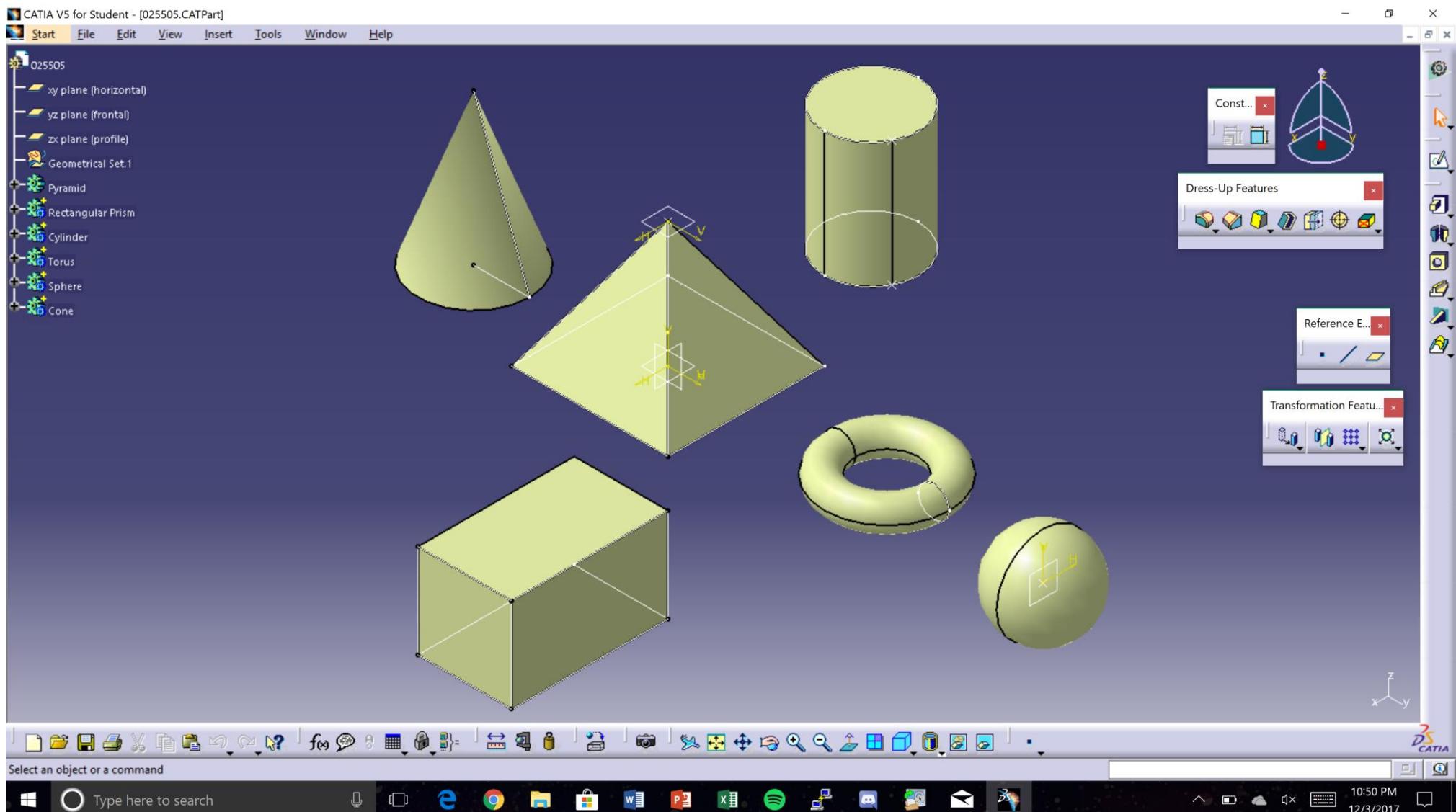
Date: 11/8/17

Assignment #: 025405

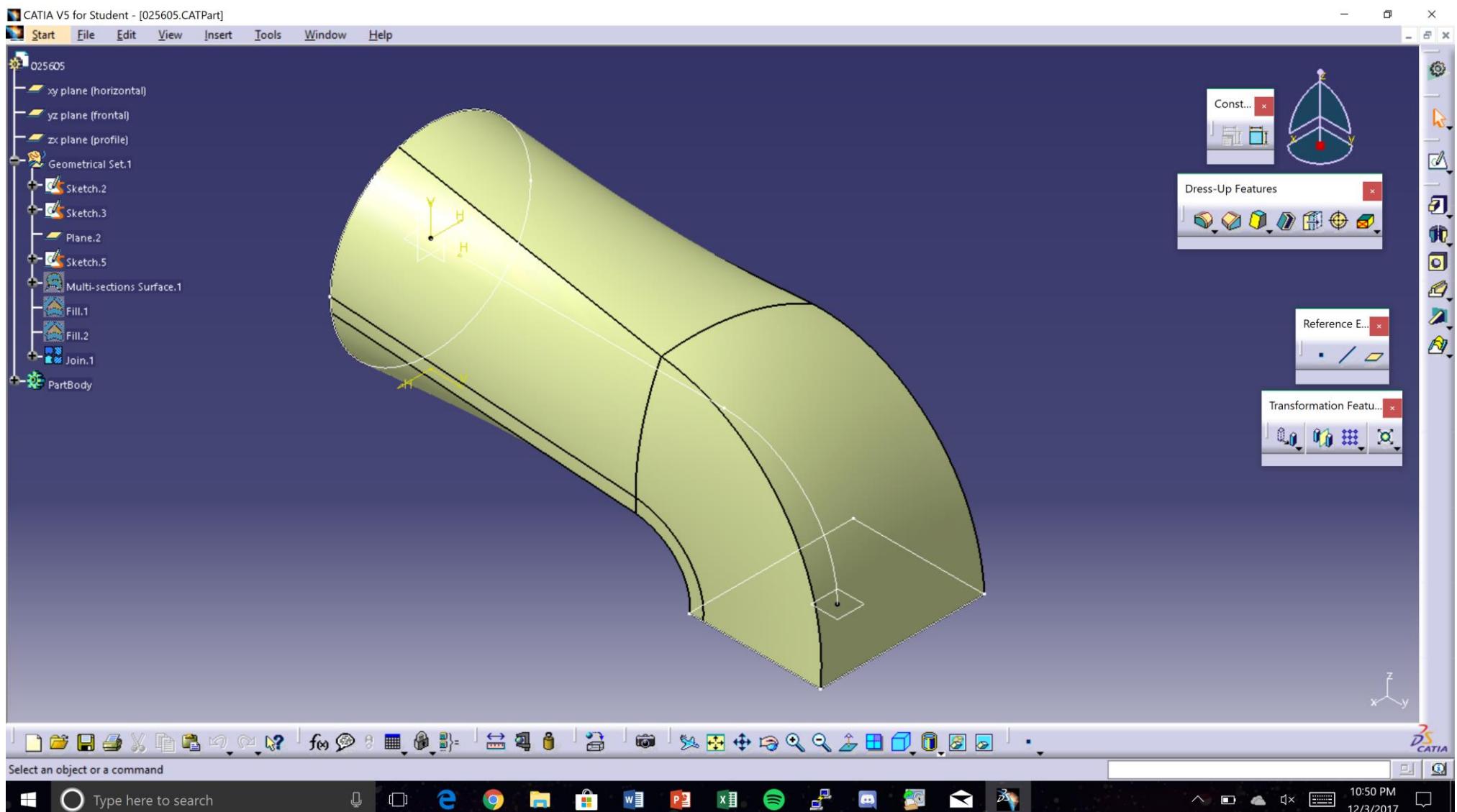
(10/10)

- An engineer is someone that solves problems using the tools at hand
- We need to be people that reinvent themselves every 18 months
- Engineers can be seen as mechanical artists
- You will work with many tools, many you won't know how to use at the start
- Engineer is the function of an artists formation
- Technology is forever growing and we must grow with it or fail

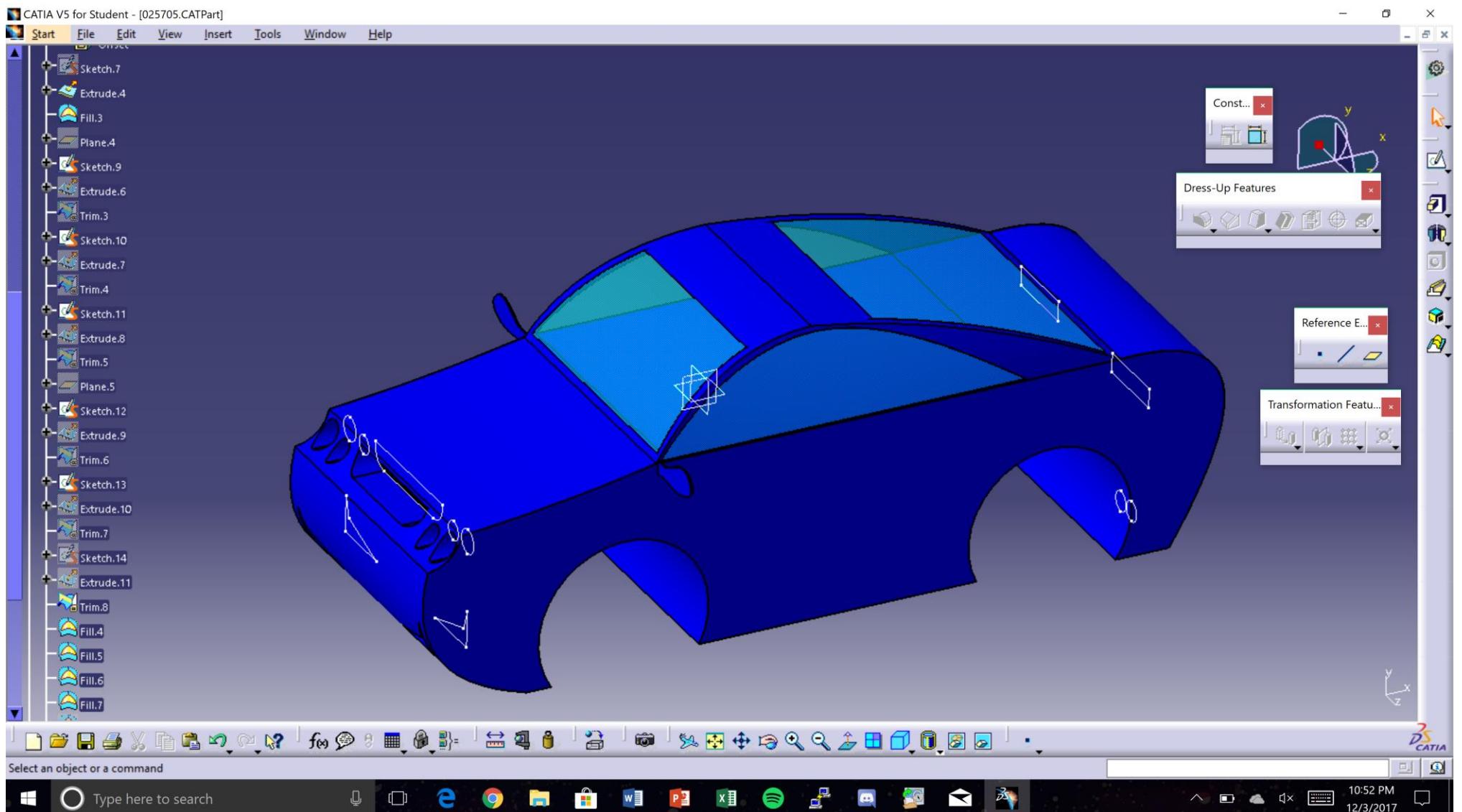
025505



025605



025705



025805

BOLDA, MATTHEW

TXID: 0DZ42099CN0293718
mbo1da@purdue.edu

10/10

Assignment #: 025805

Date: 11/15/17

You can use blue prints from online

Start, sketch tracer

-right view

-must download into gereric form, go to part and change file type

-front view

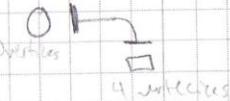
→ import

Insert → new part → frontal plane → Sketch tracer → extrude

Mitsubishi GT model 3000 19.95

always design in mm

Sweep command for front



Circle radius 30 mm, with axis
breaking element, cut into 4

025905

QUIZZES

02Q0105

Bolde, Matthew
TXID: 00242099CN0293218
mbo1da@purdue.edu

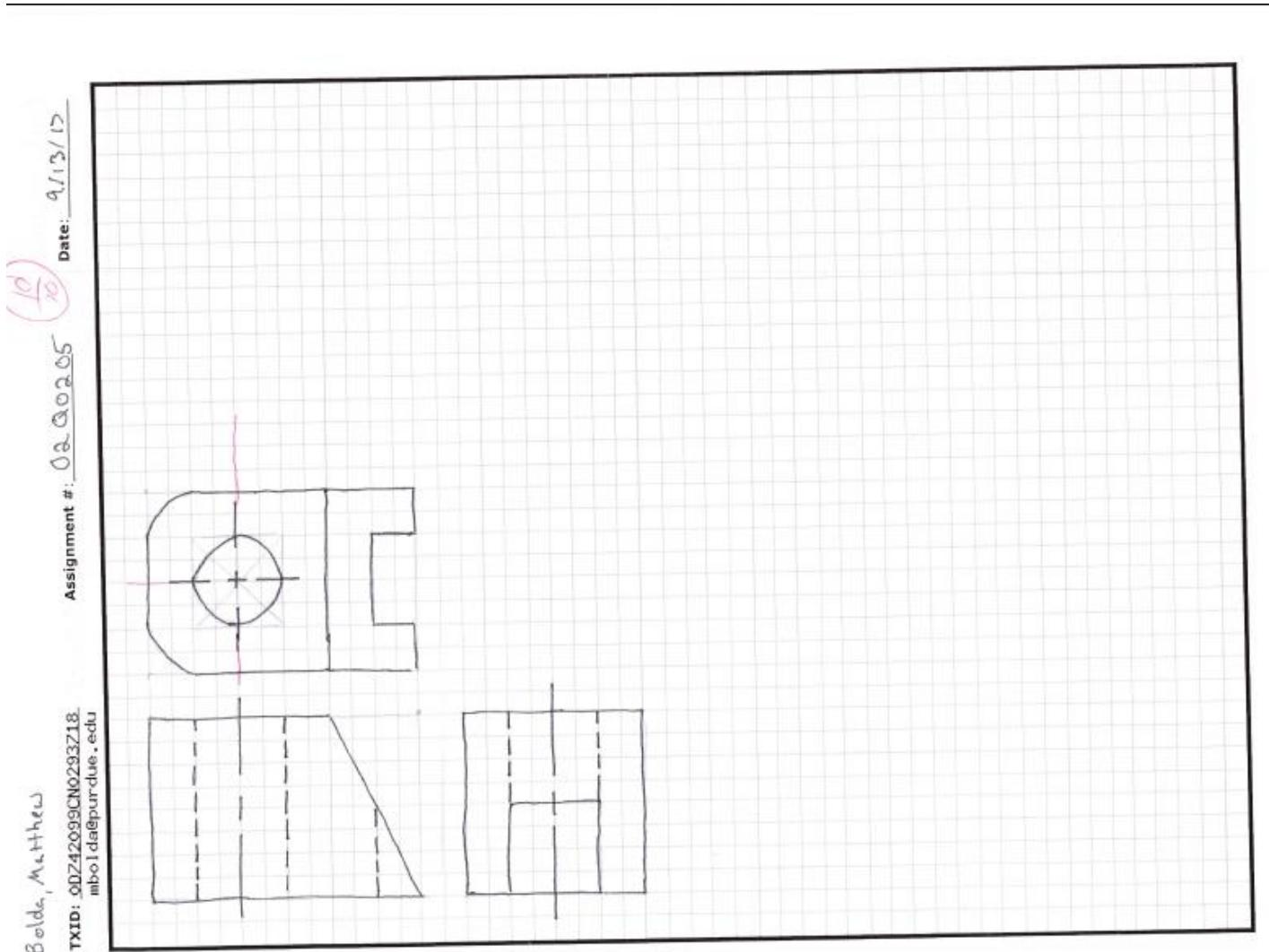
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10

Assignment #: 02 Q0105

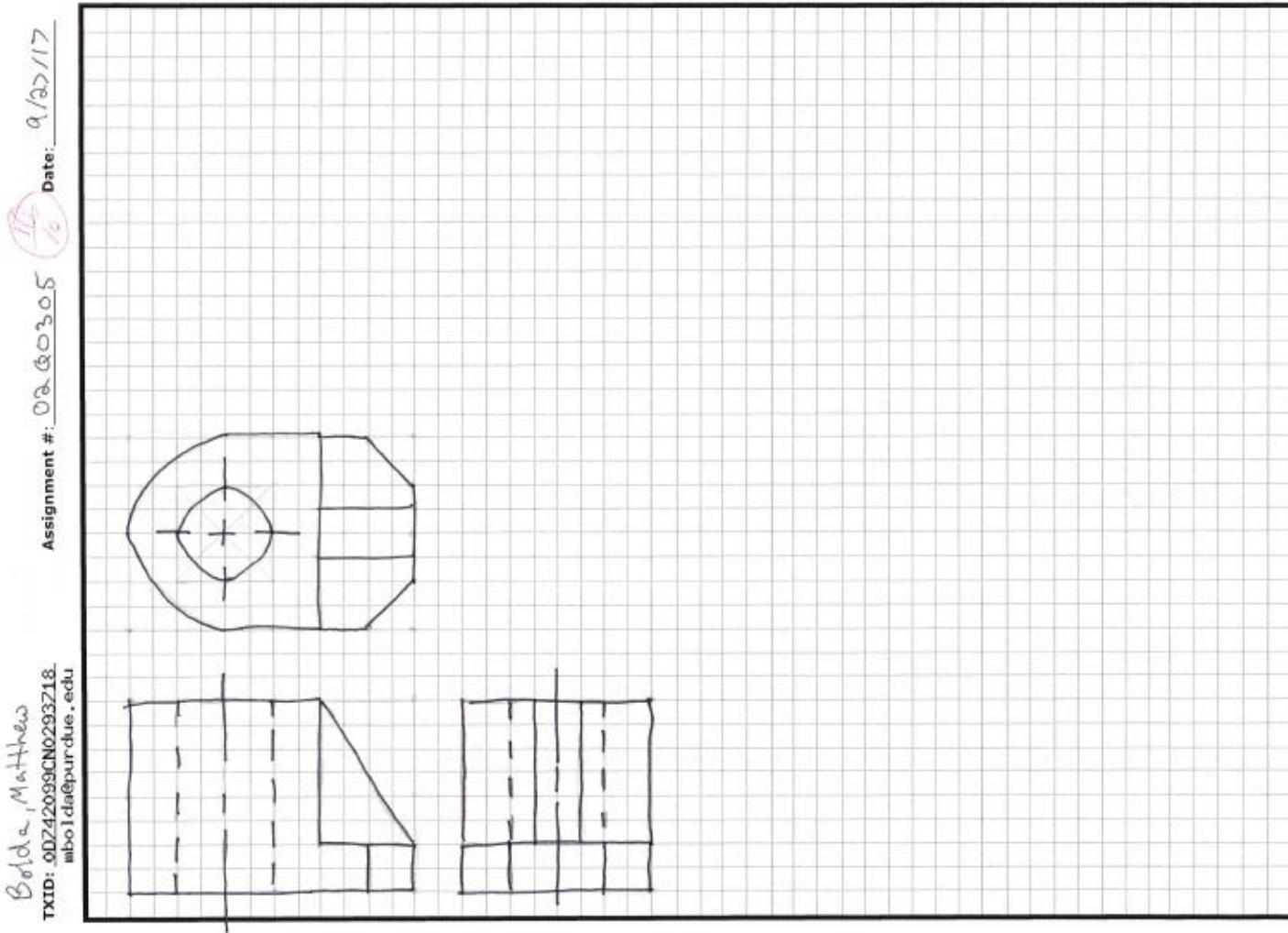
Date: 8/30/17

- Robert Jezior rjezior@purdue.edu
- rjezior@purdue.edu
- lab number (02), assignment number , and assigned seat (02)
- Four, 4,
- 13, Thirteen
- CGT 163-XX ,XX is lab number 02

02Q0205



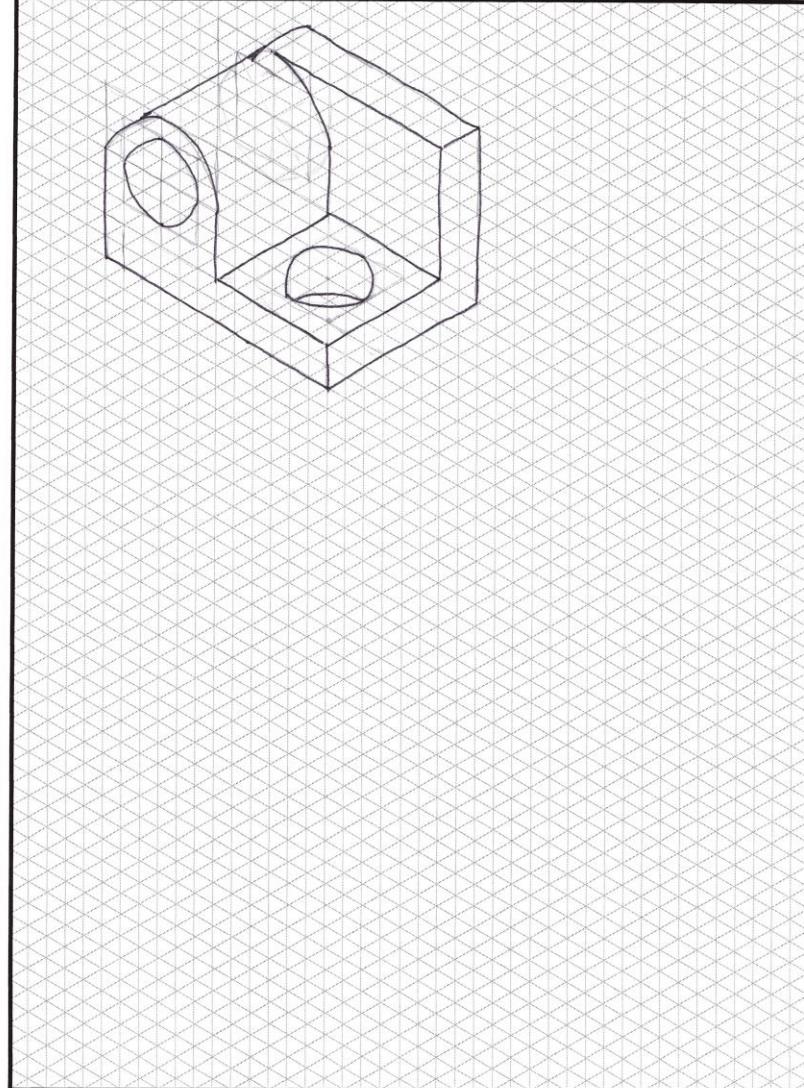
02Q0305



02Q0305

Bolda, Matthew
TXID: 0D742099CN0293718
mbo1da@purdue.edu

Assignment #: 02Q0405 10 Date: 10/18/17



FINAL PROJECT

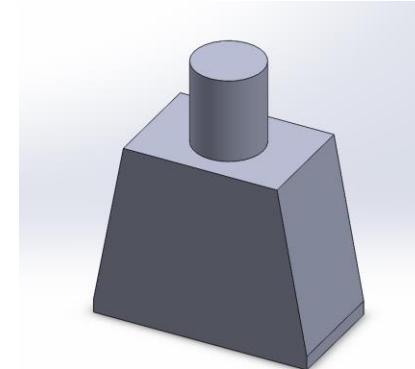
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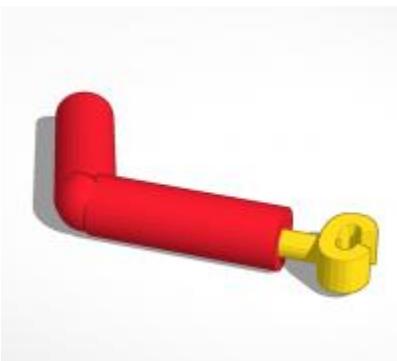
ASSEMBLED DESIGN



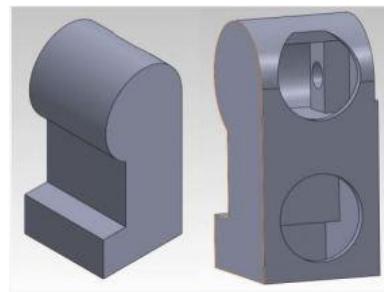
PART 1: HEAD



PART 2: TORSO

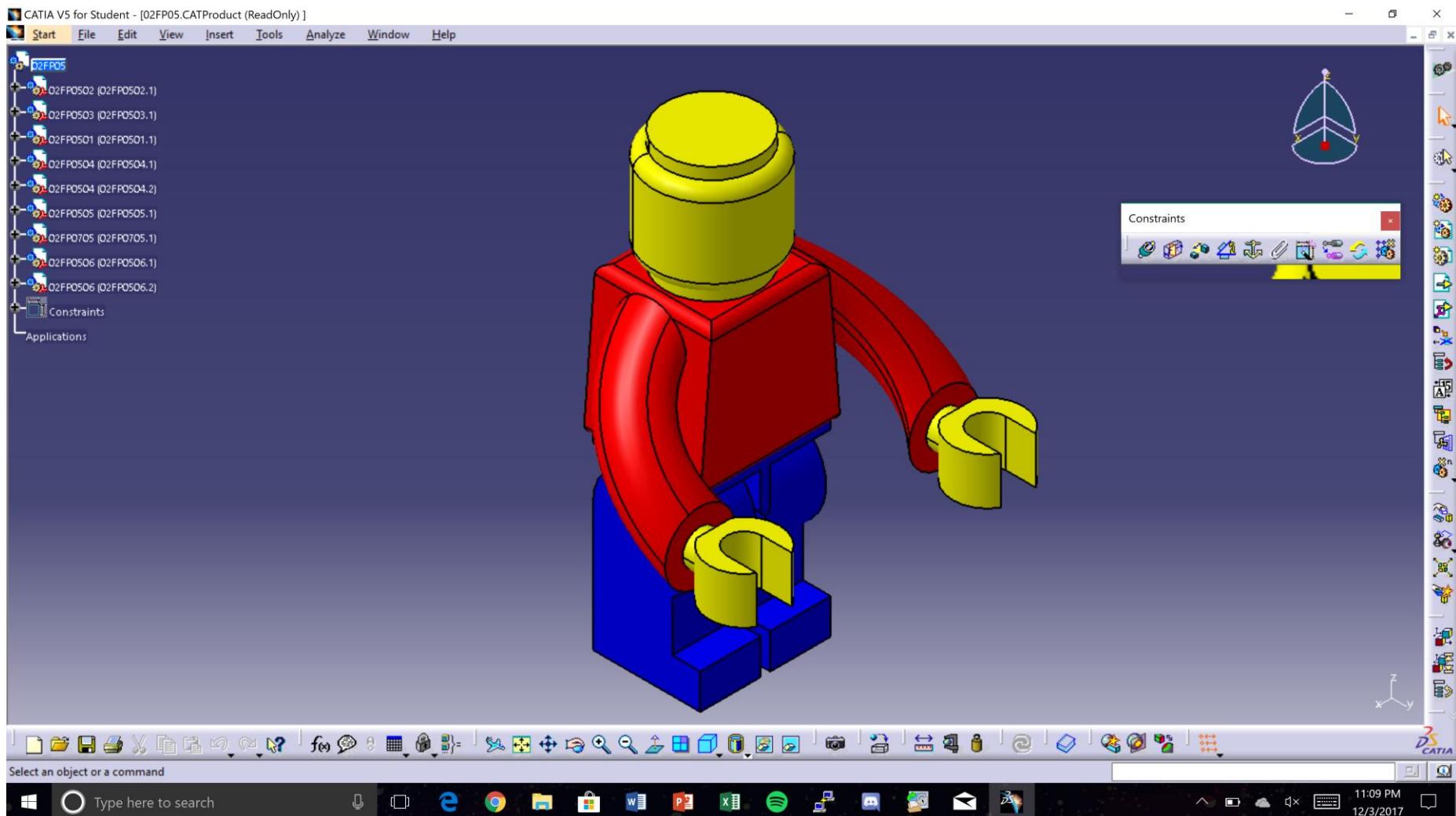


PARTS 3 AND 4: ARMS AND HANDS

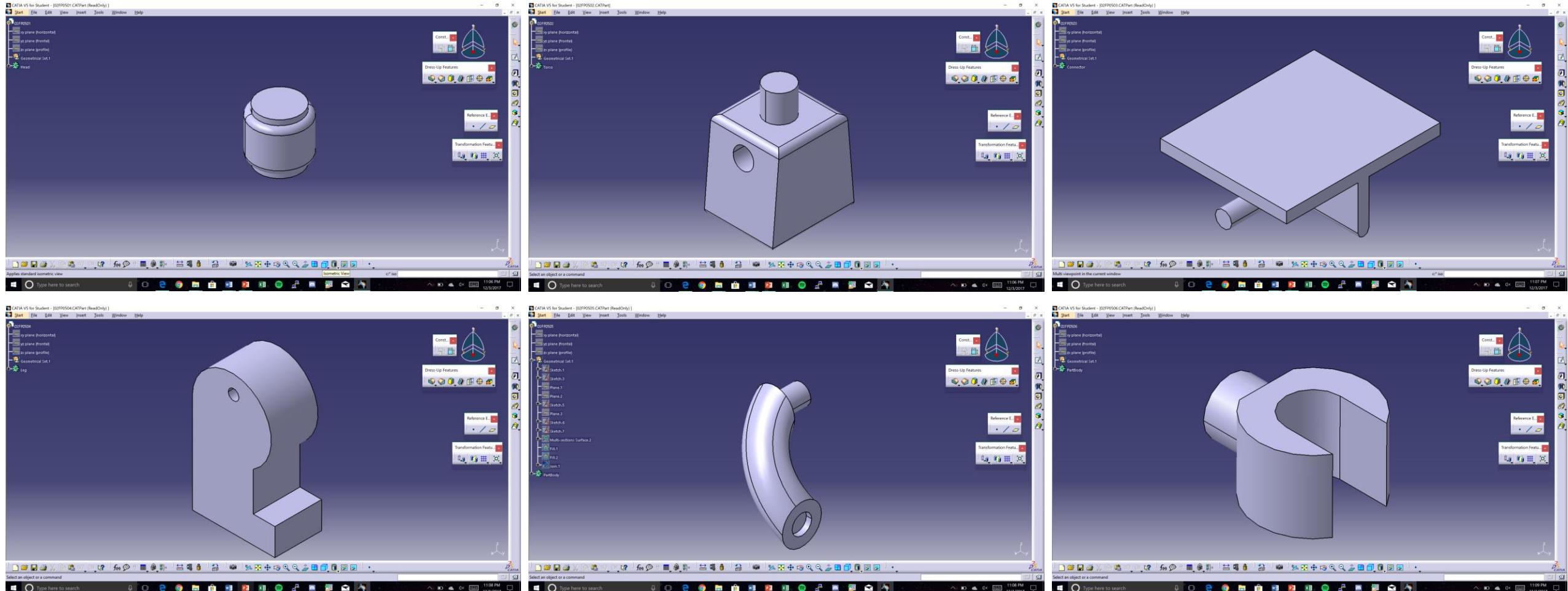


PART 5 AND 6: LEGS

Completed Final Project



Final Project Parts



Final Project Drawings

