

Mec E 468 Numerical Simulation in Mechanical Engineering Design

AUTOMARK REPORT

Semester: Win 2022

Instructor: Prof. David S. Nobes

Student Name:

Assignment: Assignment No 1

PROCESSING DATE: July 4, 2022

AUTOMark Assessment Grade: 705 out of 727

AUTOMark Recommended Grade: 97 out of 100

NOTE: This grade is preliminary only and needs to be confirmed.

The following pages include each of the drawings in the following order:

- Your submission
- Your submission marked by AutoMARK
- The solution

Other important points:

- Examples are given on eClass of how to interpret the mark-up symbols used by AUTOMark.
- If you have any questions, discuss with your TA in the next lab time.

DRAWING CREATION DATE: 28-Sep-2010 08:59:34

DRAWING LAST SAVE DATE: 30-Jun-2022 10:42:49

MODEL CREATION DATE: 23-Sep-2010 11:25:48

MODEL LAST SAVE DATE: 30-Jun-2022 10:42:49

AutoMARK details:

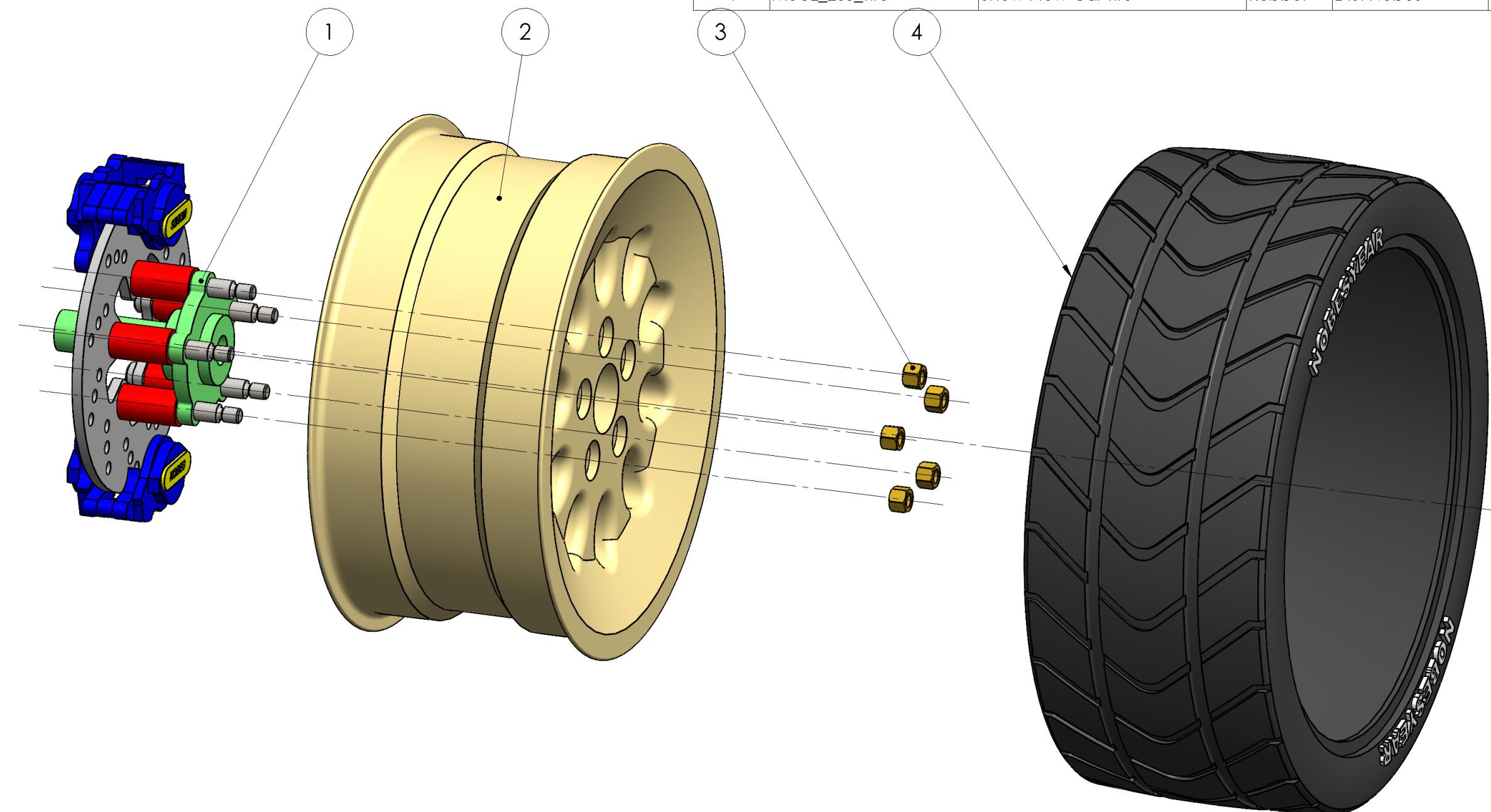
- Sheetnames should contain only alphabetical characters
- Weights of feature properties are set by the marker
- AutoMARK v 4.0 software written and designed by Owen Stadlwieser

AutoMARK Criterion (The weights of these criterion are decided by the marker):

- DRAWING: SheetOrder, ExtraSheets
- SHEET: SheetPaperSize, SheetScale, SheetTemplate, SheetExtraBOMS, SheetExtraViews, SheetViewTypes, SheetIntersectingBalloons
- BILLOFMATERIALS: BOMTableType, BOMNumberColumns, BOMNumberRows, BOMPosition, BOMTableHeight, BOMTableWidth, BOMFontType, BOMFontSize
- VIEW: ViewScale, ViewDisplayStyle, ViewExtraDimension, ViewPosition, ViewExtraCenterMarks, ViewMass, ViewMaterial, ViewExtraDatums, ViewWrongProjection, ViewExtraCenterlines
- DIMENSION: DimensionDangling, DimensionWrongView, DimensionPosition, DimensionArrowSide, DimensionValue, DimensionBadText
- CENTERLINE: CenterlineDangling, CenterlinePosition
- CENTERMARK: CentermarkDangling, CentermarkPosition, CentermarkShowlines, CentermarkAngle, CentermarkConnectionLines, CentermarkExtensions, CentermarkGap, CentermarkSize, CentermarkGroupedCorrectly
- DATUM: DatumDangling, DatumWrongView, DatumPosition, DatumLabel, DatumDisplayStyle, DatumFilledTriangle
- Balloon: BalloonDangling, BalloonPosition

Symbol/Colour	Meaning
✓	No deductions on feature
Colour	Incorrect value
Colour	Miscellaneous error
Colour	Incorrect Position
Colour	Unrecognized feature
Colour	Missing feature
?	Feature not found on key

ITEM NO.	SW-File Name(File Name)	SW-Title(Title)	Material	SW-Author(Author)	QTY.
1	MecE265_Car_Hub	Hub, Disk and Calaper Assembly	Various	D.S. Nobes	1
2	dsn_Rim	Custom Low Speed Snow Rim	Pure Gold	D.S.Nobes	1
3	MecE_265_Nut	ACME HTNUT 0.500-20-D-N	Brass	Wyle E. Coyote	5
4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1



Student Submission

MecE 265	UNLESS OTHERWISE SPECIFIED:	DRAWN BY:
Instructor: Dr DS Nobes Fall 2021	DIMENSIONS ARE IN MM	David S. Nobes
Comments:	TOLERANCES: ANGULAR: $\pm 0.5^\circ$	Lab Day ALL
	LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $XXX = \pm 0.025$	SM By D.S.Nobes
	SURFACE FINISH $0.6 \mu\text{m}$	TA Initials DSN
	DO NOT SCALE DRAWING	zacha June 30, 2022 10:42:49 AM September 23, 2010 11:25:48 AM
MATERIAL: Various	FILE NAME: MecE265_Car_Hub_Rim_Tire	SIZE B Assignment Number Assignment 03 REV 2
SCALE: 1:4 Mass: 175308.62 SHEET 1 OF 3		

8

7

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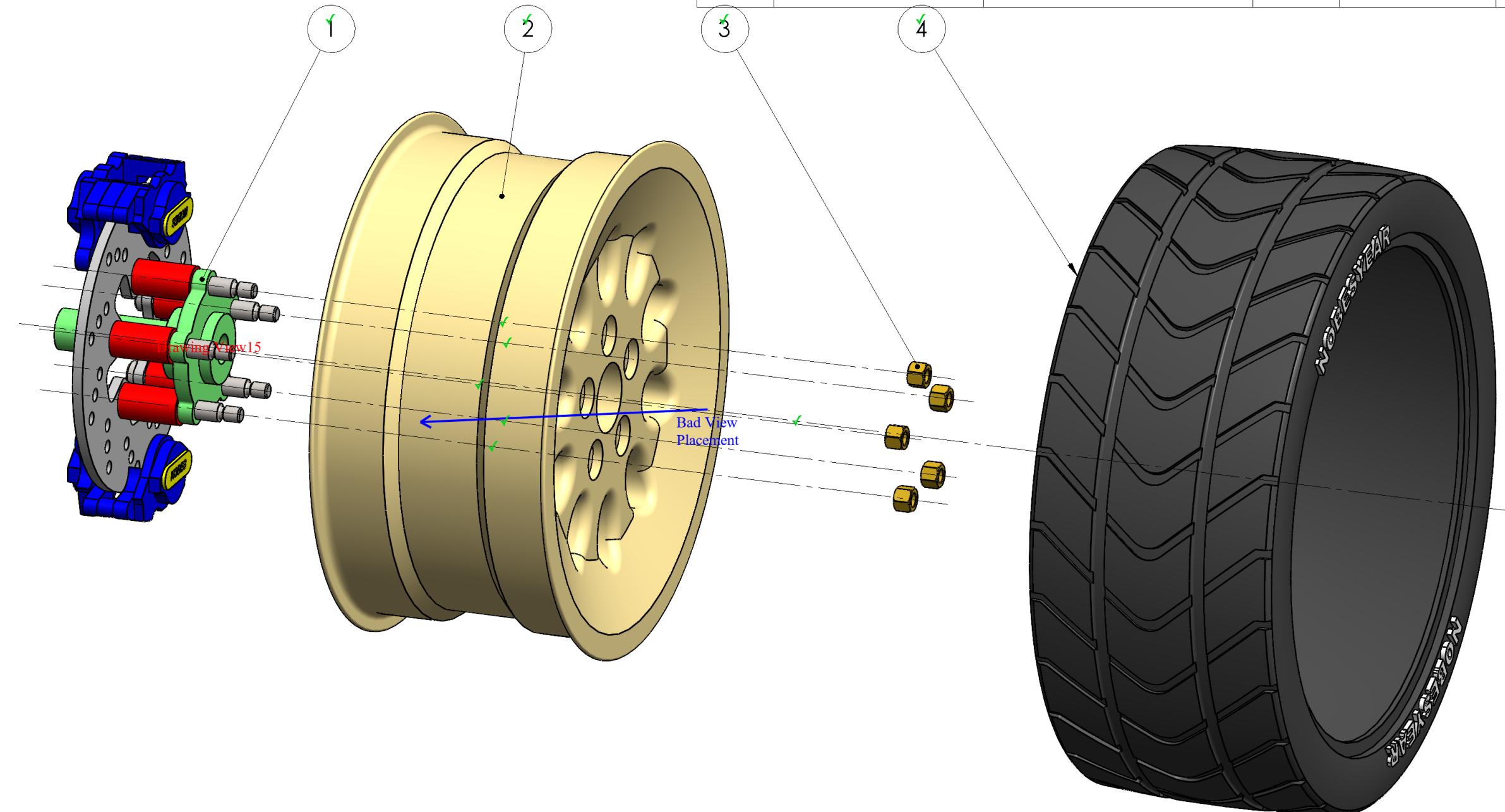
2

Snapped to Corner

Drawing View15: 42/48
DetailItem439: 40/40
SHEET TOTAL: 131/137

Correct Height
Correct Font
Correct Font Size
Correct Column Order
Correct Content

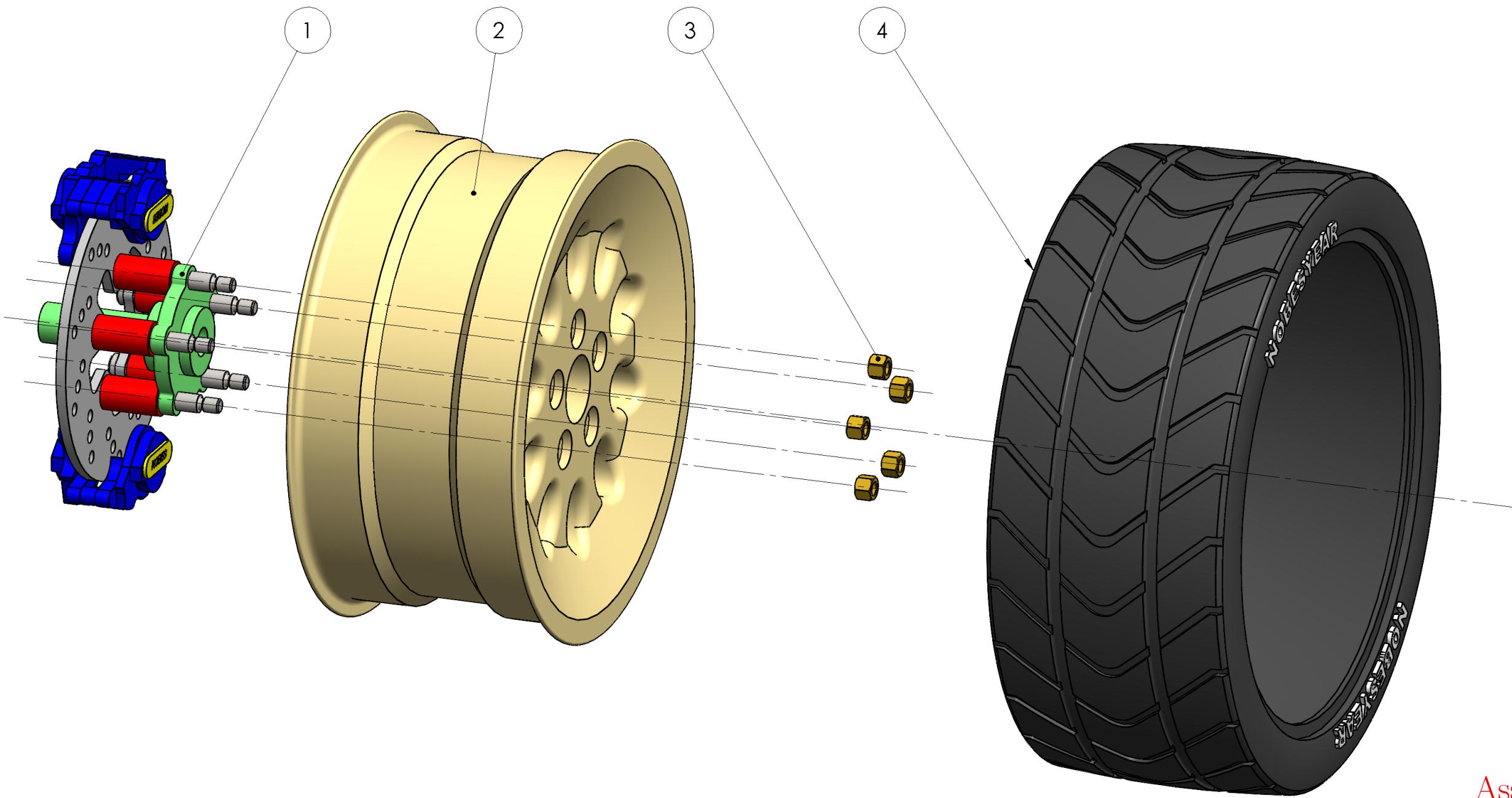
ITEM NO.	SW-File Name(File Name)	SW-Title(Title)	Material	SW-Author(Author)	QTY.
1	MecE265_Car_Hub	Hub, Disk and Calaper Assembly	Various	D.S. Nobes	1
2	dsn_Rim	Custom Low Profile Snow Rim	Pure Gold	D.S.Nobes	1
3	MecE_265_Nut	ACME HTNUT 0.500-20-D-N	Brass	Wyle E. Coyote	5
4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1



Automark of Student Submission

MecE 265		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MM TOLERANCES: ANGULAR: $\pm 0.5^\circ$ LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $XXX = \pm 0.025$	DRAWN BY: David S. Nobes
Instructor: Dr DS Nobes Fall 2021	Comments: Correct Tangent Line style Correct Scale Correct Display style	Lab Day ALL	
		SM By D.S.Nobes	
		TA Initials DSN	
zacha June 30, 2022 10:42:49 AM September 23, 2010 11:25:48 AM			
SIZE B	Assignment Number Assignment 03	REV 2	
SCALE: 1:4 Mass: 175308.62 SHEET 1 OF 3			

ITEM NO.	SW-File Name(File Name)	SW-Title>Title	Material	SW-Author(Author)	QTY.
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2	dsn_Rim	Custom Low Speed Snow Rim	Pure Gold	D.S.Nobes	1
3	MecE_265_Nut	ACME HTNUT 0.500-20-D-N	Brass	Wyle E. Coyote	5
4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1



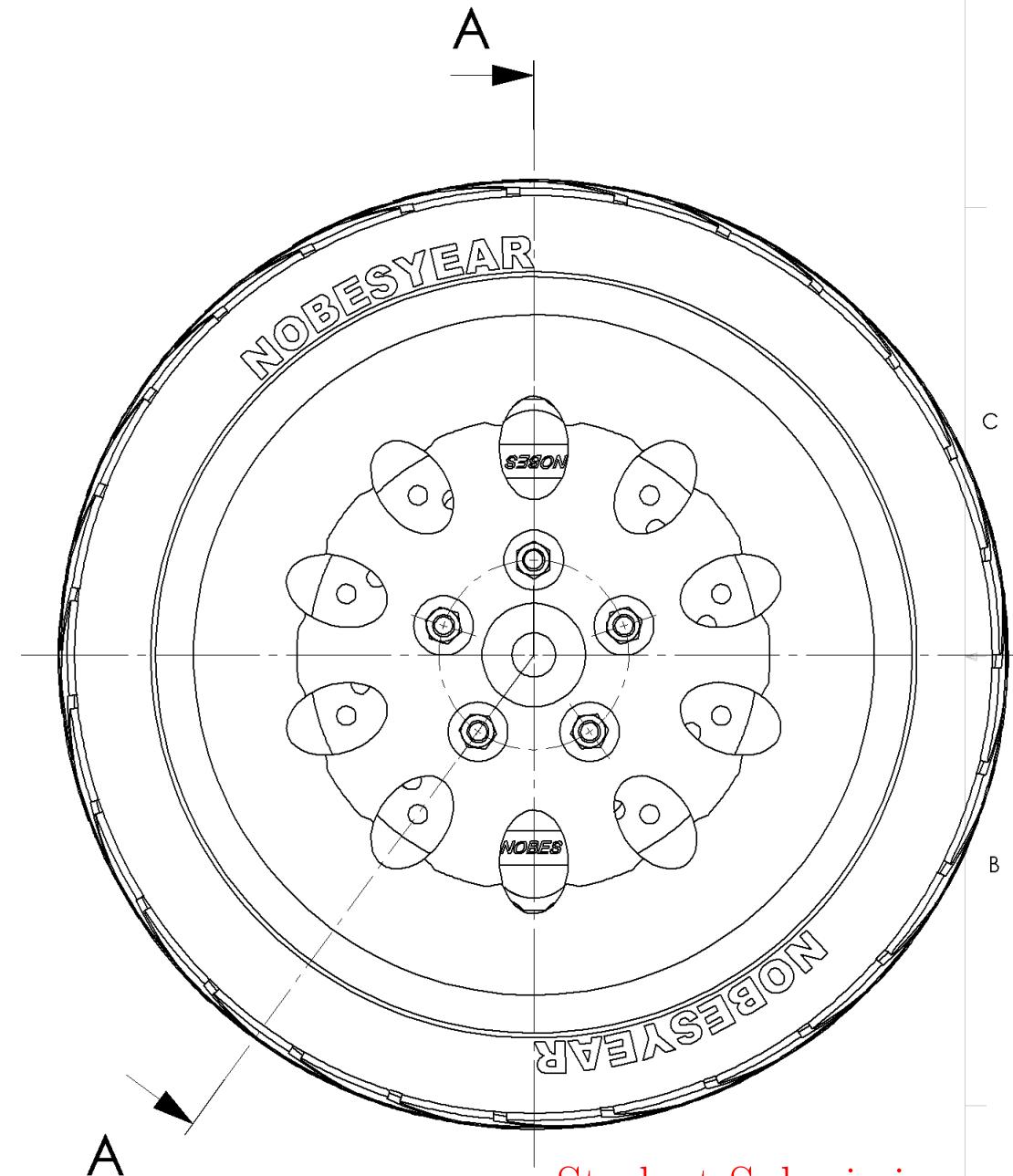
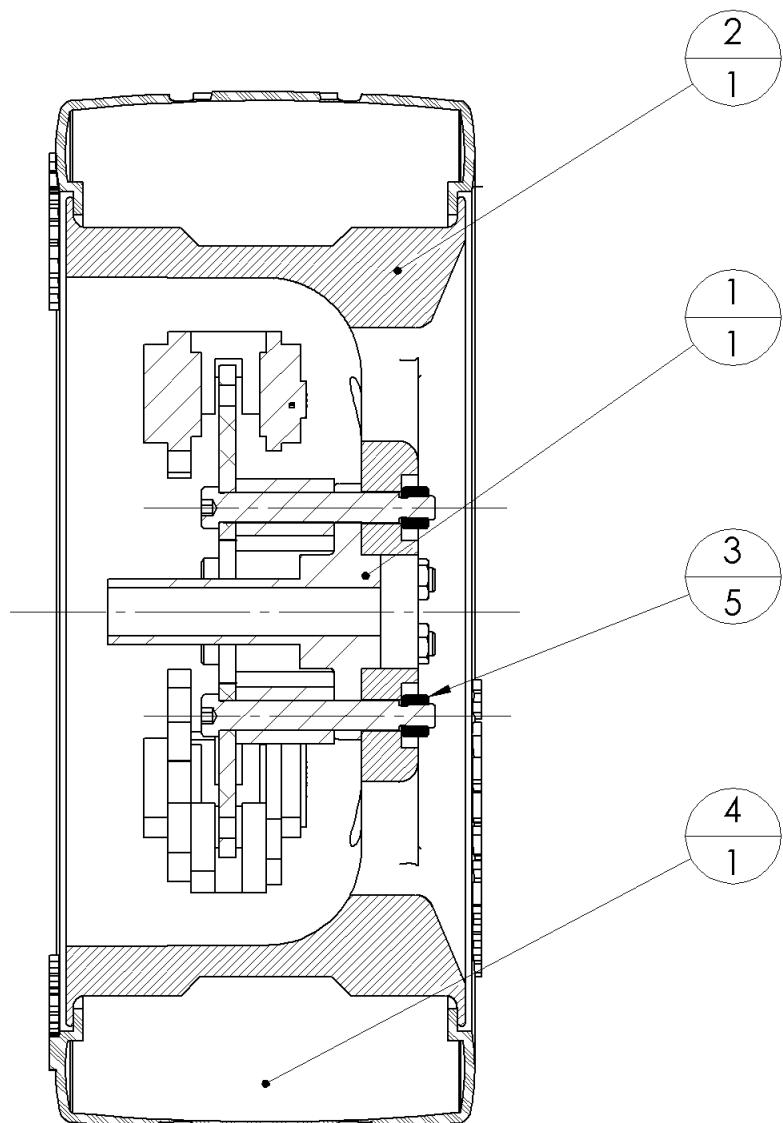
Assignment Solution

MecE 265	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MM TOLERANCES: ANGULAR: $\pm 0.5^\circ$ LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $XXX = \pm 0.025$	DRAWN BY: David S. Nobes
Instructor: Dr DS Nobes Fall 2021	Comments:	Lab Day ALL
		SM By D.S.Nobes
		TA Initials DSN
	DO NOT SCALE DRAWING	zacha September 28, 2021 2:35:53 PM September 23, 2010 11:25:48 AM
MATERIAL: Various	FILE NAME: MecE265_Car_Hub_Rim_Tire	SIZE B Assignment Number Assignment 03 REV 2
SCALE: 1:4 Mass: 175308.62 SHEET 1 OF 3		

The Department of Mechanical Engineering
UNIVERSITY OF ALBERTA

TITLE:
**Hub, Rim, Tire
Assembly**

ITEM NO.	SW-File Name(File Name)	SW-Title(Title)	Material	SW-Author(Author)	QTY.
1	MecE265_Car_Hub	Hub, Disk and Calaper Assembly	Various	D.S. Nobes	1
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4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1



Student Submission

MecE 265		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MM TOLERANCES: ANGULAR: $\pm 0.5^\circ$ LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $XXX = \pm 0.025$	DRAWN BY: David S. Nobes
Instructor: Dr DS Nobes Fall 2021	Comments:	Lab Day ALL	
		SM By D.S.Nobes	
		TA Initials DSN	
zacha June 30, 2022 10:42:49 AM September 23, 2010 11:25:48 AM		DO NOT SCALE DRAWING	
MATERIAL: Various		SIZE B Assignment Number Assignment 03	
FILE NAME: MecE265_Car_Hub_Rim_Tire		REV 2	
SCALE: 1:4 Mass: 175308.62 SHEET 2 OF 3			

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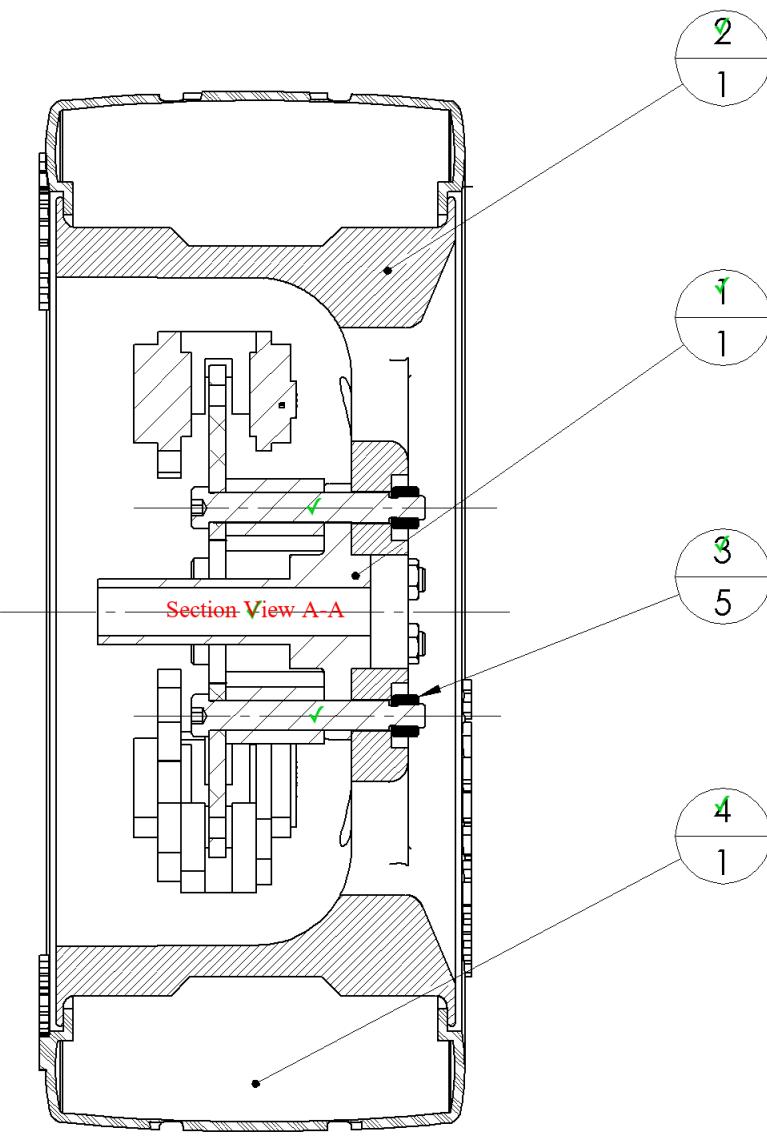
2

Snapped to Corner

Drawing View1: 51/57
 Section View A-A: 39/39
 DetailItem493: 40/40
 SHEET TOTAL: 179/185

Correct Height
 Correct Font
 Correct Font Size
 Correct Column Order
 Correct Content

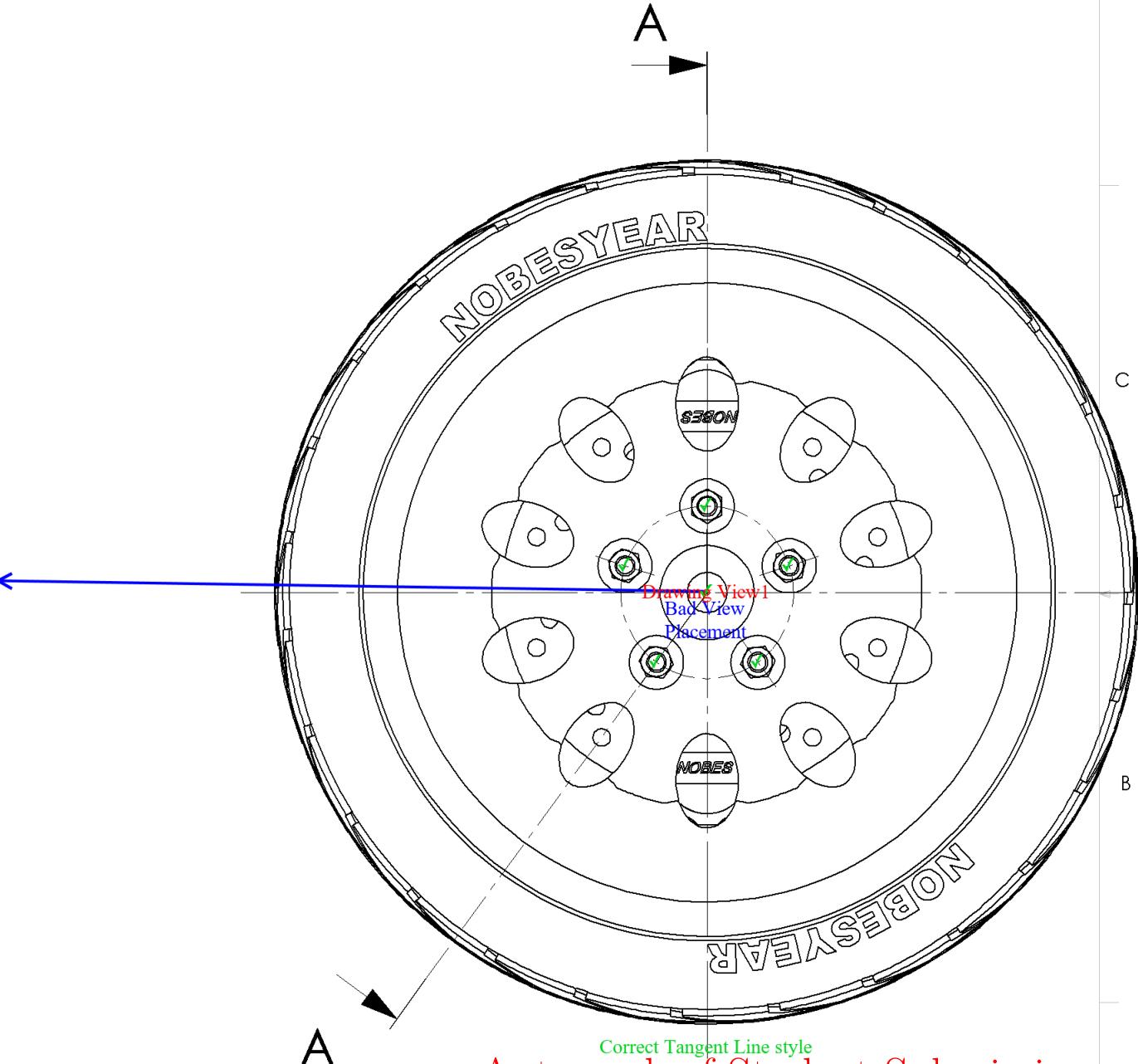
ITEM NO.	SW-File Name(File Name)	SW-Title(Title)	Material	SW-Author(Author)	QTY.
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2	dsn_Rim	Custom Low Profile Snow Rim	Pure Gold	D.S.Nobes	1
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4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1



Correct Tangent Line style

Correct Scale

Correct Display style
SECTION A-A



Correct Tangent Line style
 Correct Scale

Correct Display style
 The Department of Mechanical Engineering
 UNIVERSITY OF ALBERTA

TITLE:

Hub, Rim, Tire
Assembly**MecE 265**

Instructor:
Dr DS Nobes
 Fall 2021

Comments:

DO NOT SCALE DRAWING

0.6

μm

SURFACE FINISH

DIMENSIONS ARE IN MM

TOLERANCES:

ANGULAR: ± 0.5 °

LINEAR

X = ± 0.5

X.X = ± 0.1

XXX = ± 0.025

DO NOT SCALE DRAWING

DRAWN BY:

David S. Nobes

Lab Day ALL

SM By D.S.Nobes

TA Initials DSN

zacha

June 30, 2022 10:42:49 AM

September 23, 2010 11:25:48 AM

MATERIAL: Various

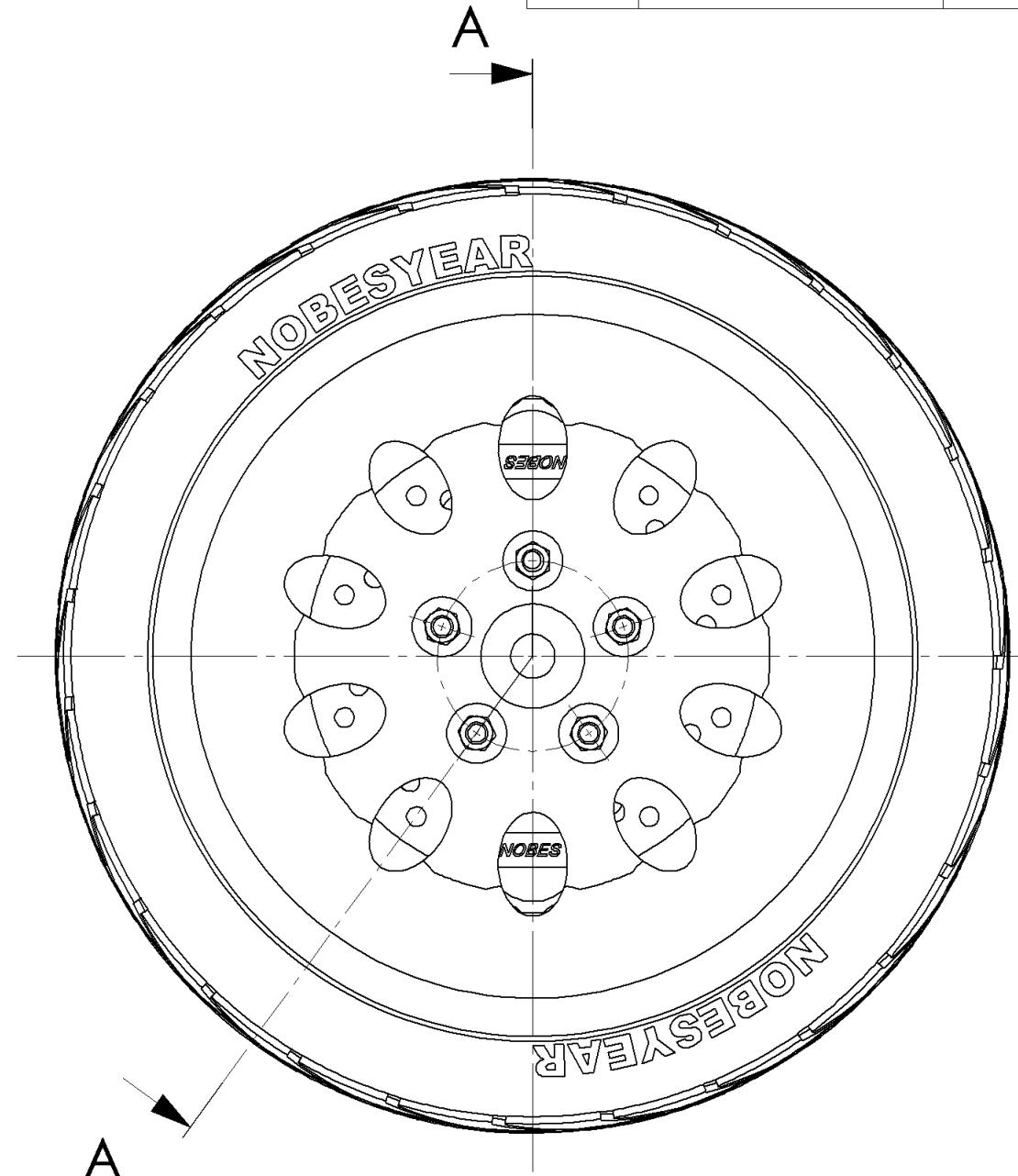
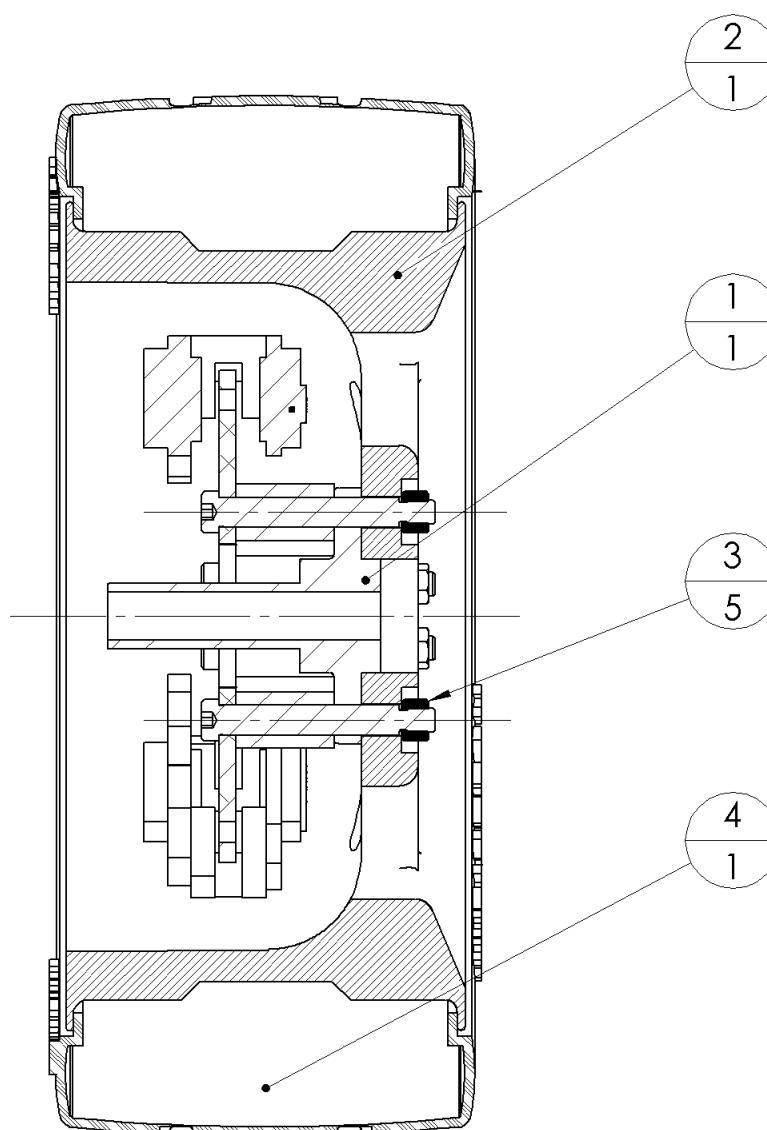
FILE NAME: MecE265_Car_Hub_Rim_Tire

B Assignment Number
Assignment 03

REV
2

SCALE: 1:4 Mass: 175308.62 SHEET 2 OF 3

ITEM NO.	SW-File Name(File Name)	SW-Title(Title)	Material	SW-Author(Author)	QTY.
1	MecE265_Car_Hub	Hub, Disk and Calaper Assembly	Various	D.S. Nobes	1
2	dsn_Rim	Custom Low Speed Snow Rim	Pure Gold	D.S.Nobes	1
3	MecE_265_Nut	ACME HTNUT 0.500-20-D-N	Brass	Wyle E. Coyote	5
4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1

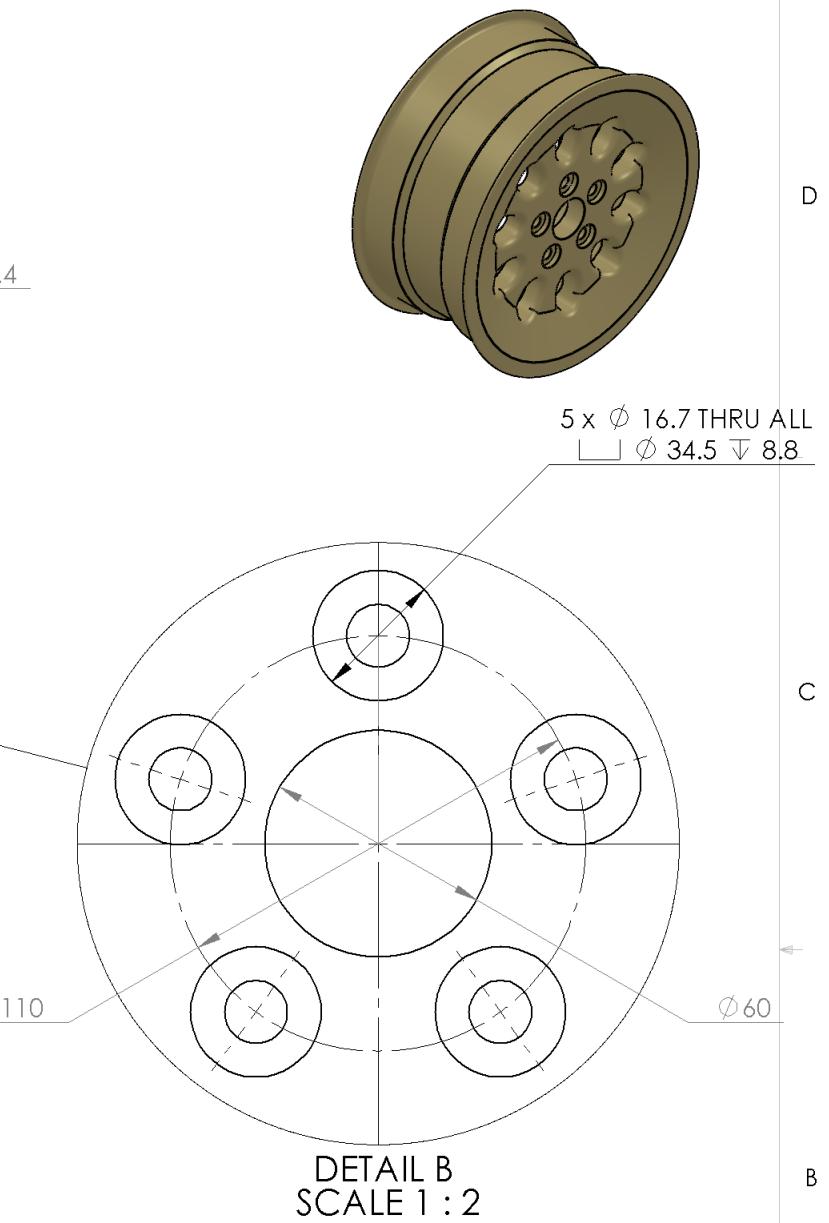
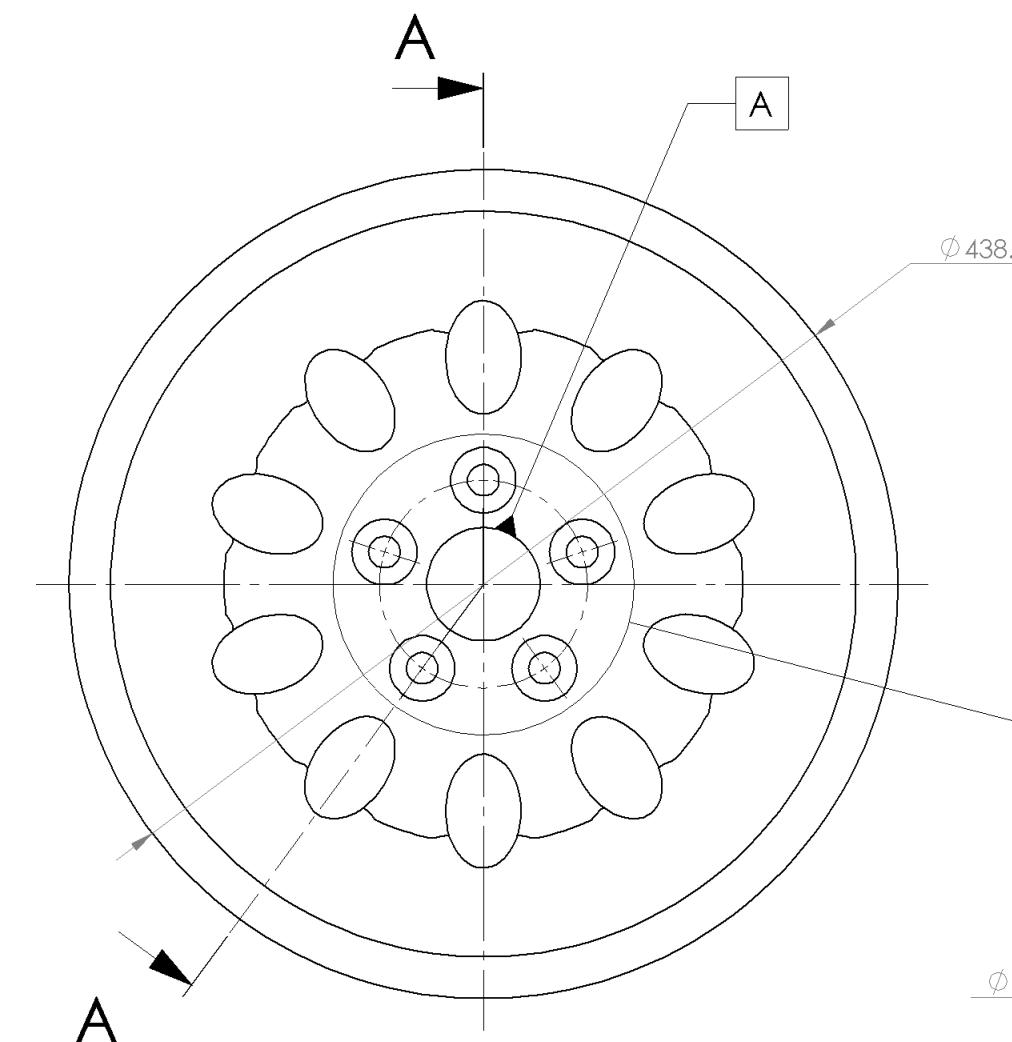
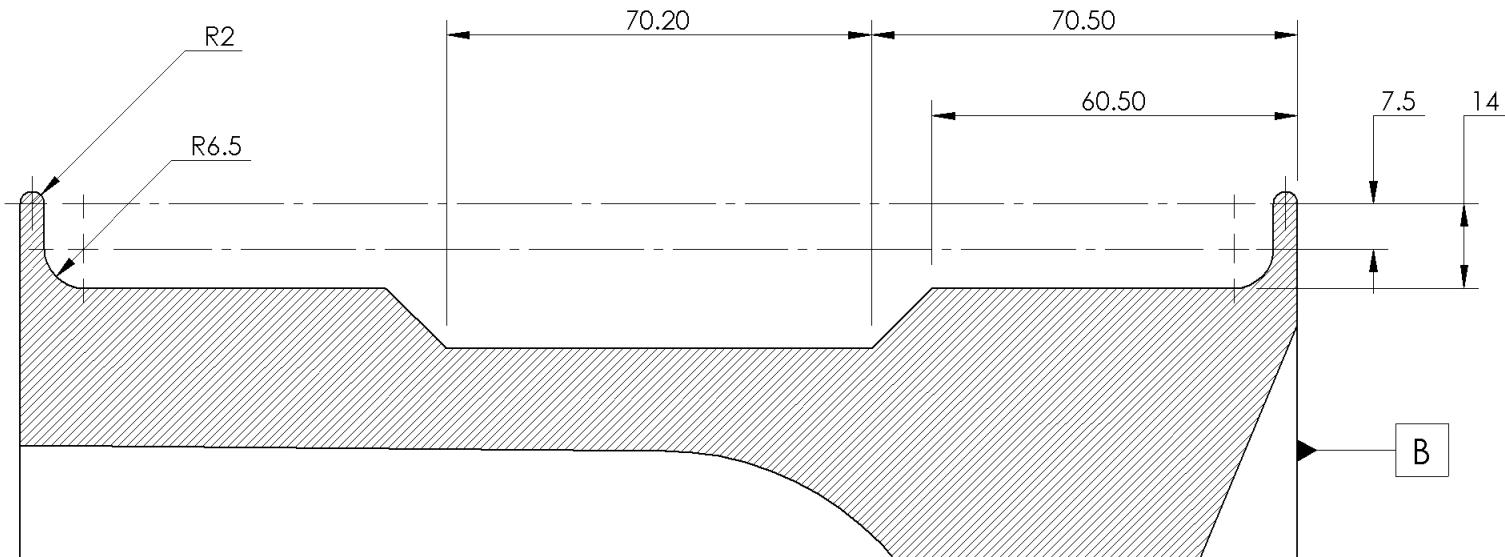
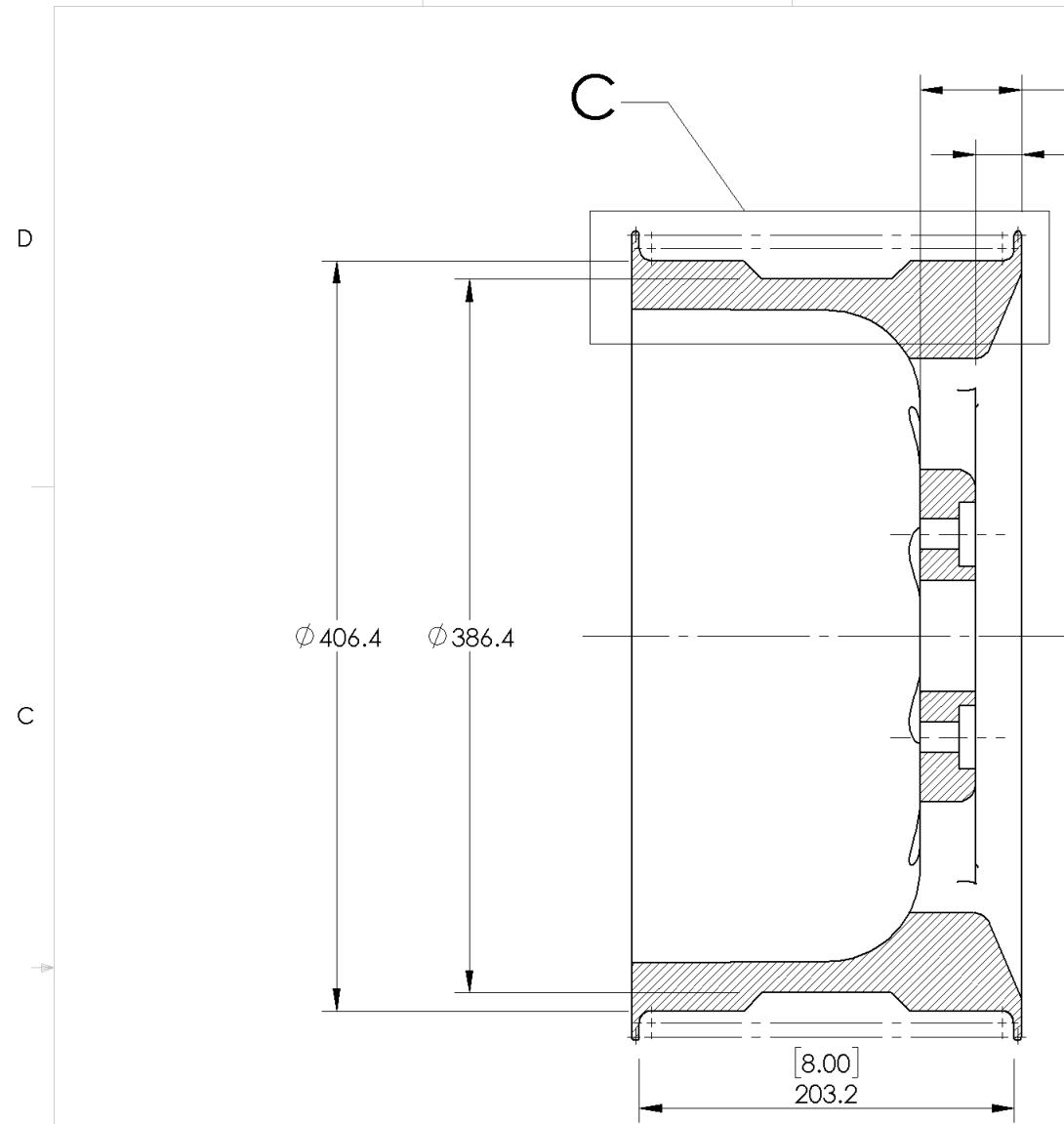


MecE 265		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MM TOLERANCES: ANGULAR: $\pm 0.5^\circ$ LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $XXX = \pm 0.025$	DRAWN BY: David S. Nobes
Instructor: Dr DS Nobes Fall 2021	Comments:	Lab Day ALL	
		SM By D.S.Nobes	
		TA Initials DSN	
		zacha September 28, 2021 2:35:53 PM September 23, 2010 11:25:48 AM	
MATERIAL: Various		DO NOT SCALE DRAWING	
FILE NAME: MecE265_Car_Hub_Rim_Tire			
B	Assignment Number Assignment 03	REV 2	
SCALE: 1:4 Mass: 175308.62 SHEET 2 OF 3			

The Department of Mechanical Engineering
UNIVERSITY OF ALBERTA

TITLE:
**Hub, Rim, Tire
Assembly**

8 7 6 5 4 3 2 1



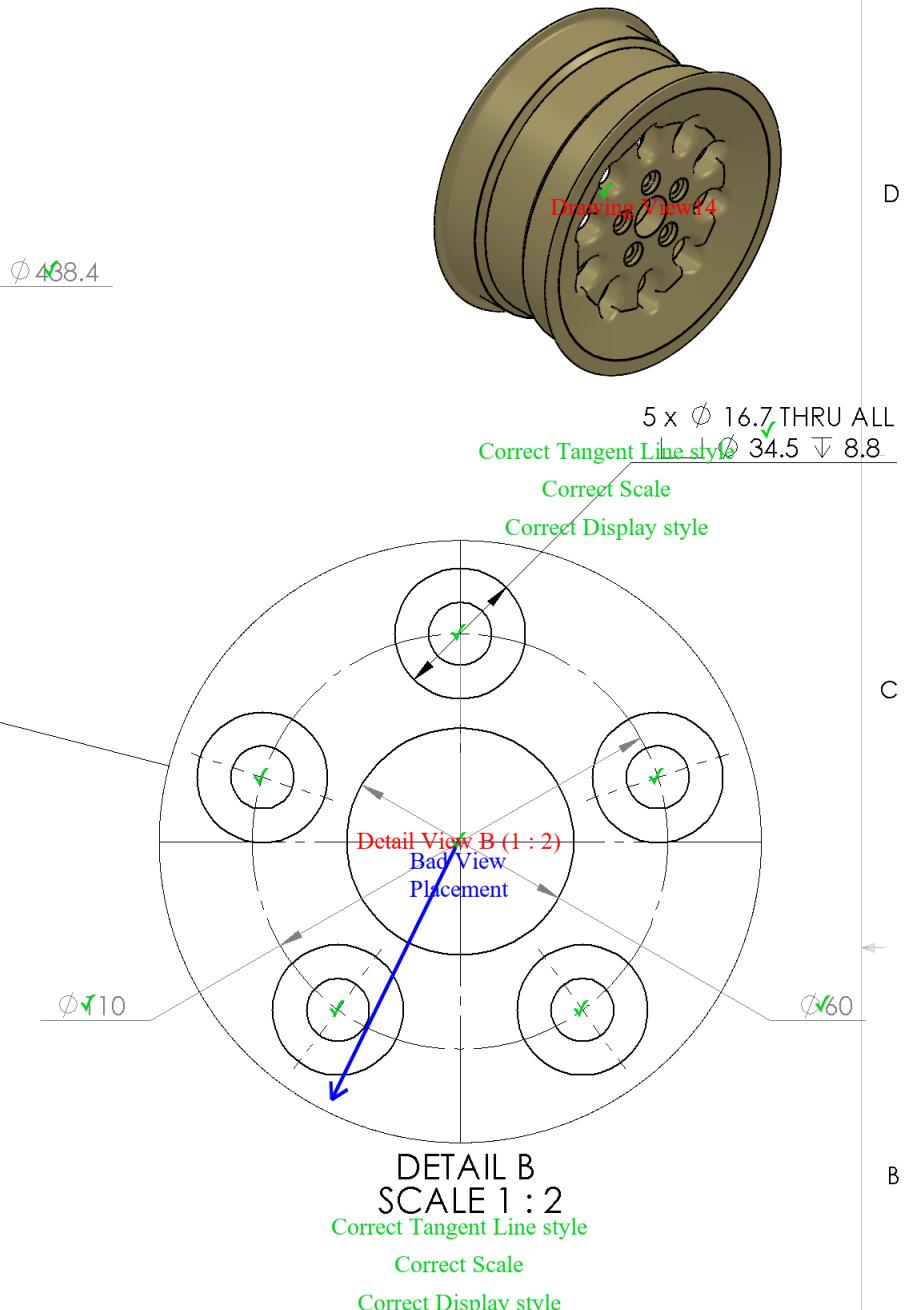
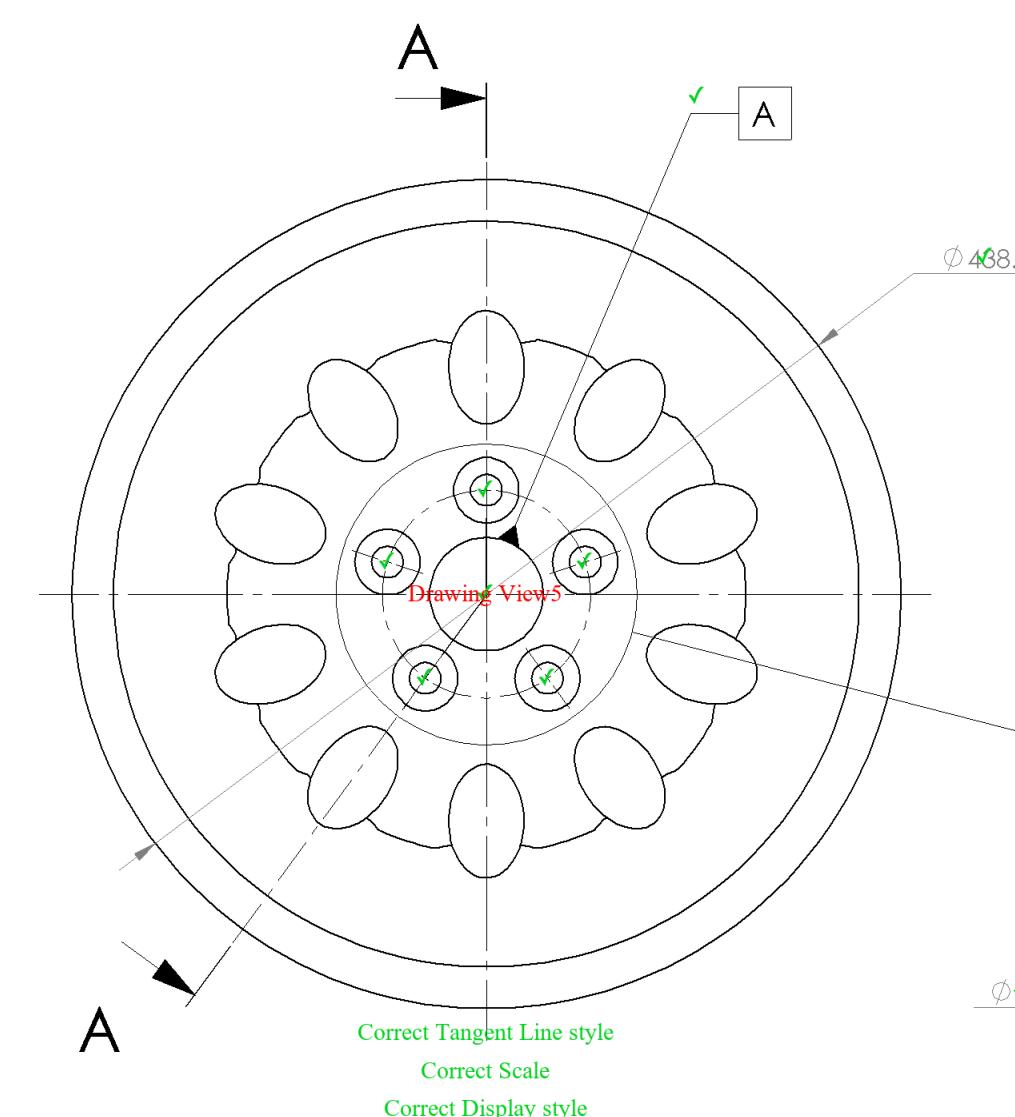
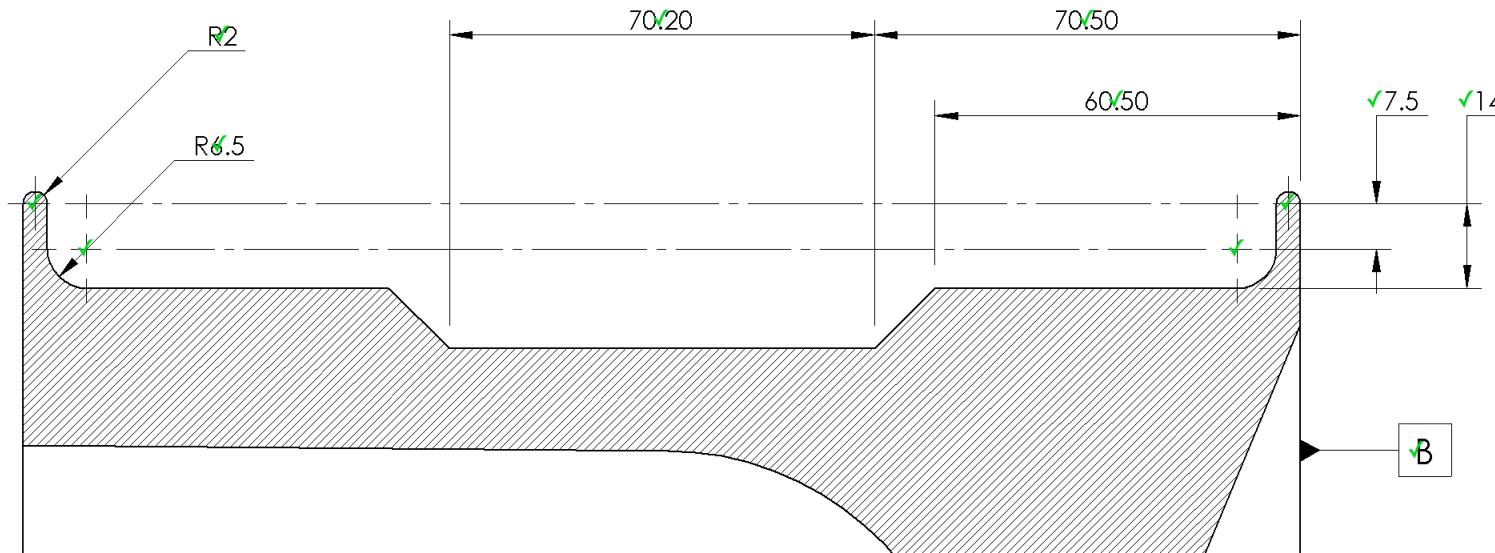
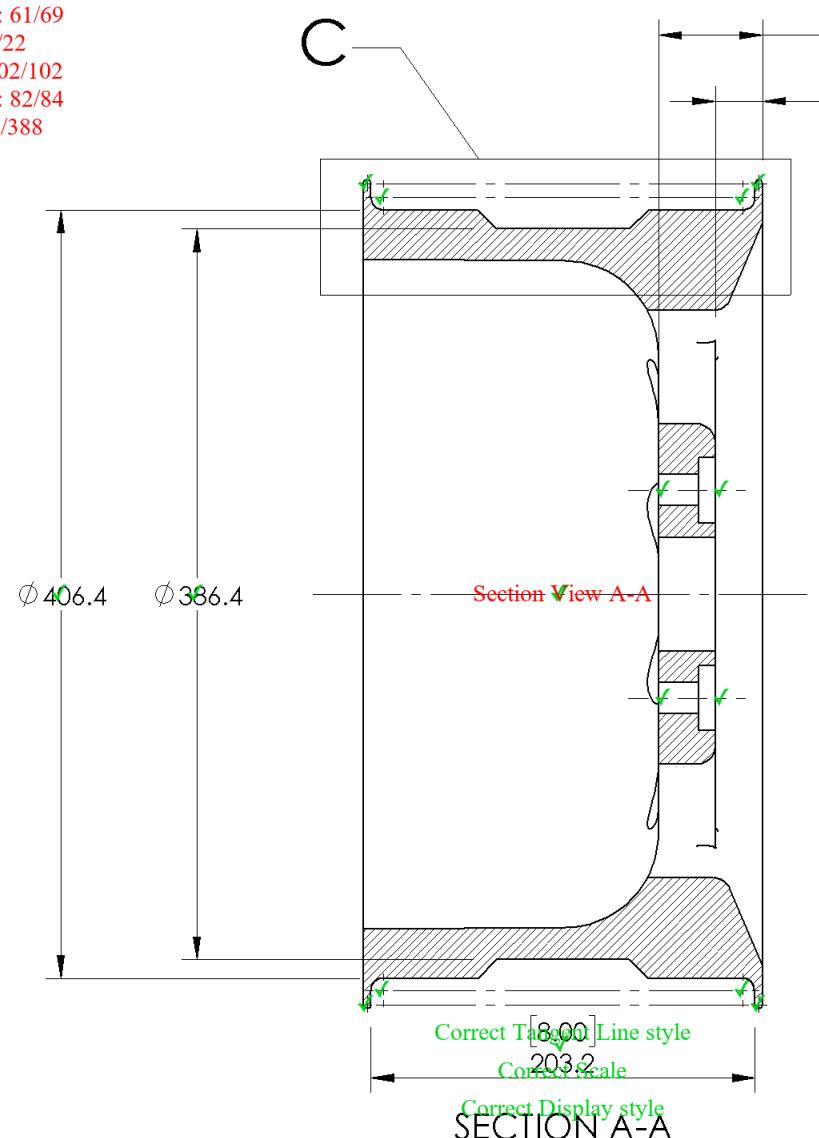
MecE 265
Instructor:
Dr DS Nobes
Fall 2021
Comments:
Only the main functional details and dimensions are shown here
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MM
TOLERANCES:
ANGULAR: $\pm 0.5^\circ$
LINEAR
 $X = \pm 0.5$
 $X.X = \pm 0.1$
 $XXX = \pm 0.025$
SURFACE FINISH
 $0.6 \mu\text{m}$
DO NOT SCALE DRAWING
MATERIAL:
Pure Gold
FILE NAME:
dsn_Rim

DRAWN BY:
David S. Nobes
Lab Day ALL
SM By D.S.Nobes
TA Initials DSN
zacha
September 9, 2021 9:46:37 AM
January 21, 2010 10:38:12 AM

Student Submission
The Department of Mechanical Engineering
UNIVERSITY OF ALBERTA
TITLE:
Custom Low Speed Snow Rim
SIZE **B** Assignment Number **Assignment 03** REV **2**
SCALE: 1:4 Mass: 168215.73 SHEET 3 OF 3

8 7 6 5 4 3 2 1

Drawing View5: 62/62
Detail View B (1 : 2): 61/69
Drawing View14: 22/22
Section View A-A: 102/102
Detail View C (4 : 5): 82/84
SHEET TOTAL: 378/388



MecE 265		UNLESS OTHERWISE SPECIFIED:
Instructor:	Dr DS Nobes	
Fall 2021		
Comments:	Only the main functional details and dimensions are shown here	
DIMENSIONS ARE IN MM		TOLERANCES:
ANGULAR: ± 0.5°		LINEAR
X = ± 0.5	X.X = ± 0.1	XXX = ± 0.025
SURFACE FINISH		0.6
µm		µm
DO NOT SCALE DRAWING		
MATERIAL:	Pure Gold	
FILE NAME:	dsn_Rim	

DRAWN BY:	David S. Nobes	
Lab Day	ALL	
SM By	D.S.Nobes	
TA Initials	DSN	
zacha		
September 9, 2021 9:46:37 AM		
January 21, 2010 10:38:12 AM		
SIZE	Assignment Number	REV
B	Assignment 03	2
SCALE: 1:4 Mass: 168215.73		SHEET 3 OF 3

The Department of Mechanical Engineering
UNIVERSITY OF ALBERTA

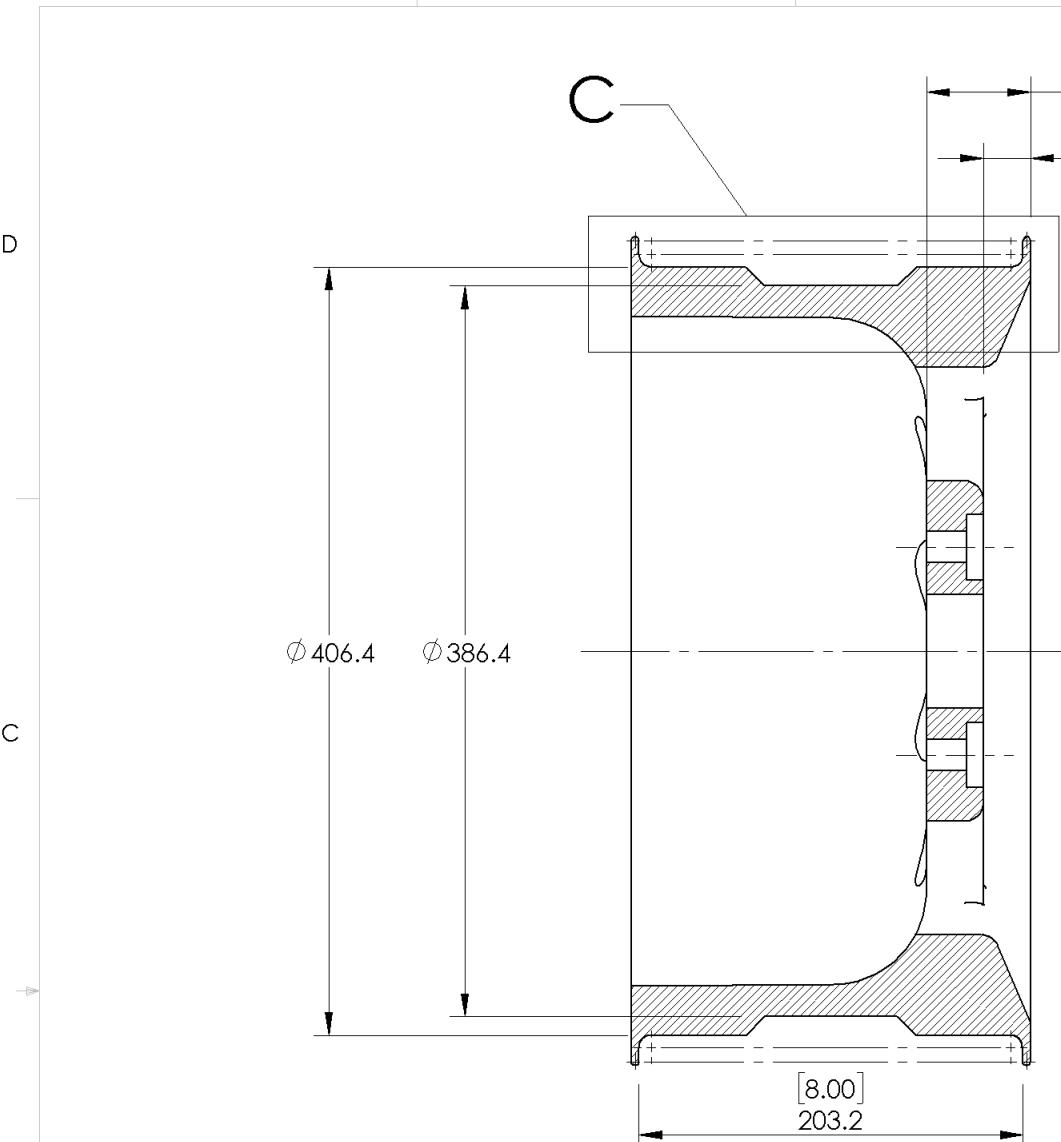
TITLE:
Custom Low Speed
Snow Rim

SCALE: 1:4 Mass: 168215.73 SHEET 3 OF 3

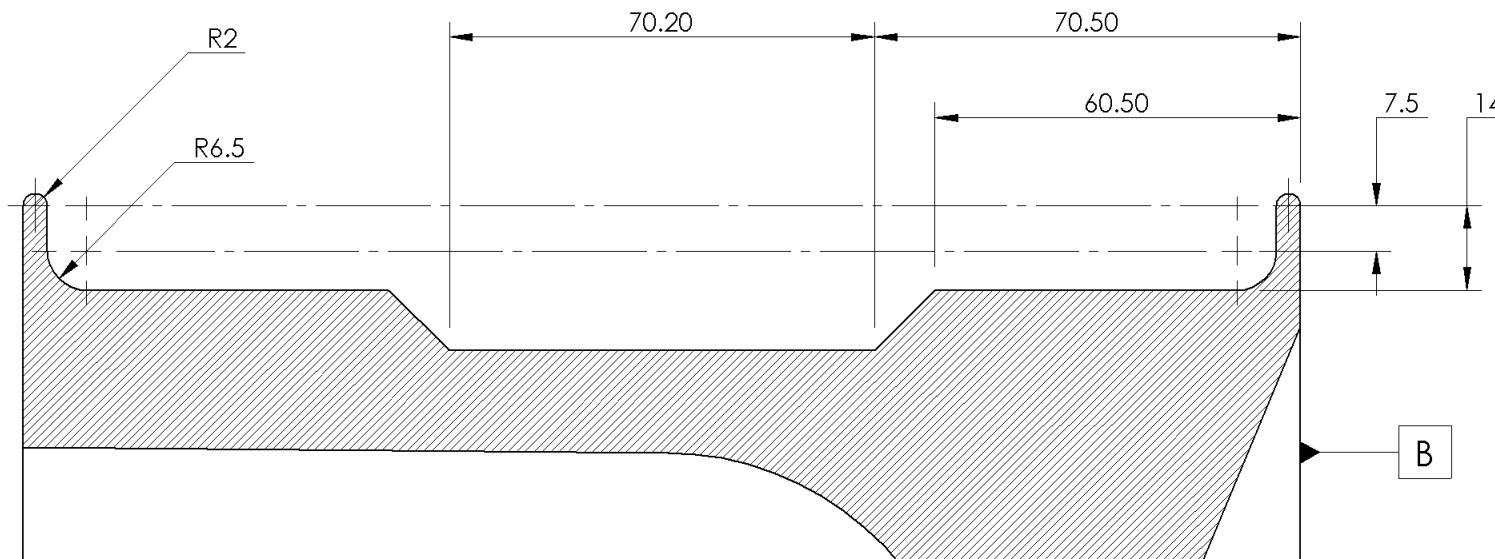
1 2 3 4 5 6 7 8

Autodesk Inventor Pro 2021

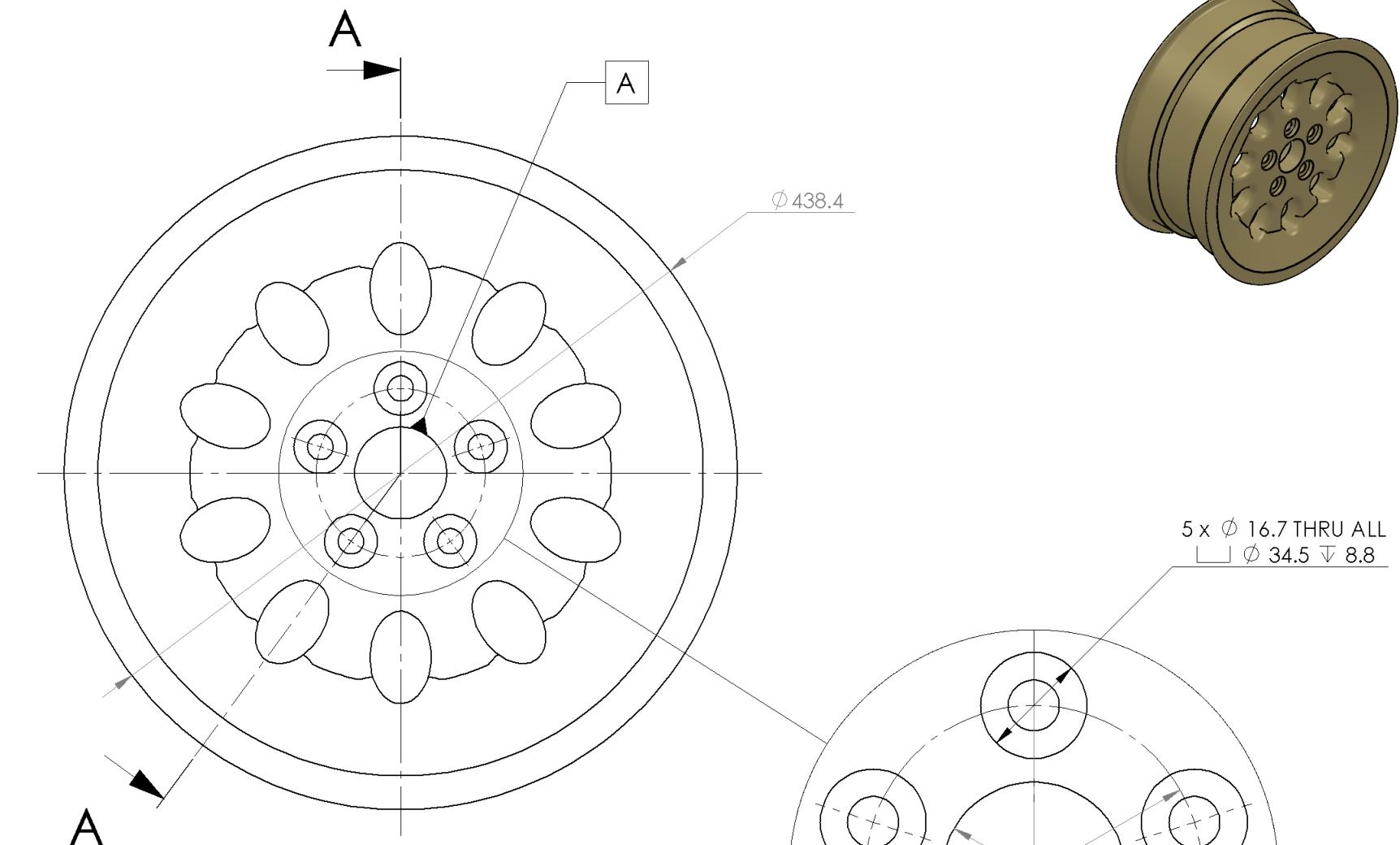
8 7 6 5 4 3 2 1



SECTION A-A



DETAIL C
SCALE 4 : 5



Assignment Solution
MecE 265
 Instructor: Dr DS Nobes Fall 2021
 Comments: Only the main functional details and dimensions are shown here
 UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN MM
 TOLERANCES:
 ANGULAR: $\pm 0.5^\circ$
 LINEAR X = ± 0.5
 XX = ± 0.1
 XXX = ± 0.025
 SURFACE FINISH $0.6 \mu\text{m}$
 DO NOT SCALE DRAWING
 MATERIAL: Pure Gold
 FILE NAME: dsn_Rim

DRAWN BY:
David S. Nobes
 Lab Day ALL
 SM By D.S.Nobes
 TA Initials DSN

zacha
 September 9, 2021 9:46:37 AM
 January 21, 2010 10:38:12 AM

The Department of Mechanical Engineering
 UNIVERSITY OF ALBERTA

TITLE:
Custom Low Speed Snow Rim

SIZE **B** Assignment Number
Assignment 03 REV
2

SCALE: 1:4 Mass: 168215.73 SHEET 3 OF 3