SolidWorks Corporation: CSWP Advanced Weldments Sample Exam

Certified SolidWorks Professional: Advanced Weldments (CSWP-WLDM)

How to take this sample exam:

1. **The questions in this sample exam give an indication of the type and difficulty of the questions on the real exam but ARE NOT MEANT TO REVEAL ALL THAT IS COVERED ON THE TEST.** For a list of topics covered on the CSWP-WLDM exam, please go to www.solidworks.com/cswp.

2. To best simulate the conditions of the real test, it is best NOT to print this exam. Since the Virtual Tester client window runs concurrently with SolidWorks you must switch back and forth between the two applications. Keeping this document open and consulting it on your computer while running SolidWorks is the best method to simulate the real test conditions.

3. The multiple choice answers should serve as a check for you to ensure that your model is on the right track while completing this exam. If you do not find your answer in the selections offered then most likely there is something wrong with your model at that point.

4. Answers to the questions are on the last pages of this sample test document. There are also hints that can help you during the exam.

5. If you can complete this exam and get at least 4 out of the 5 questions correctly in 25 minutes or less then you should be ready to take the real CSWP Advanced Weldments exam.

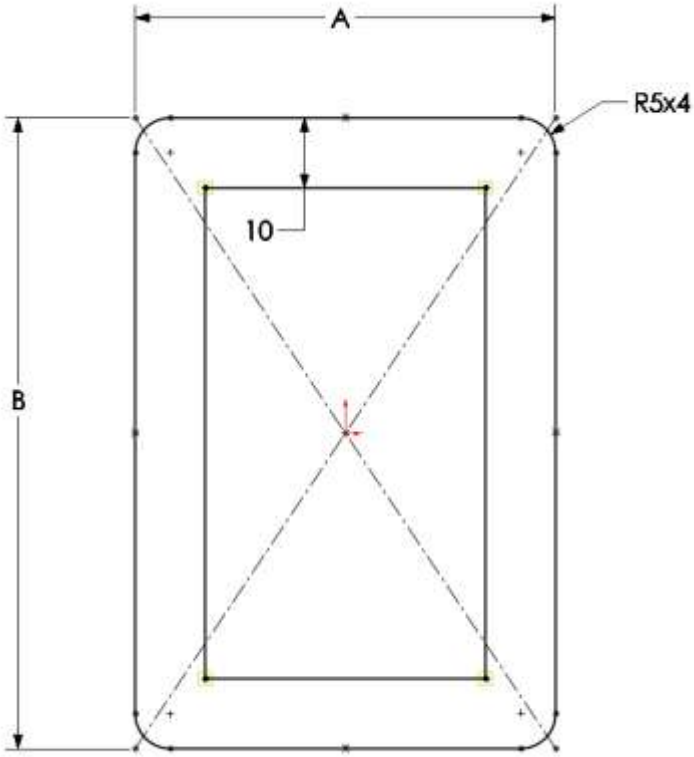
What you will need for the real CSWP exam:

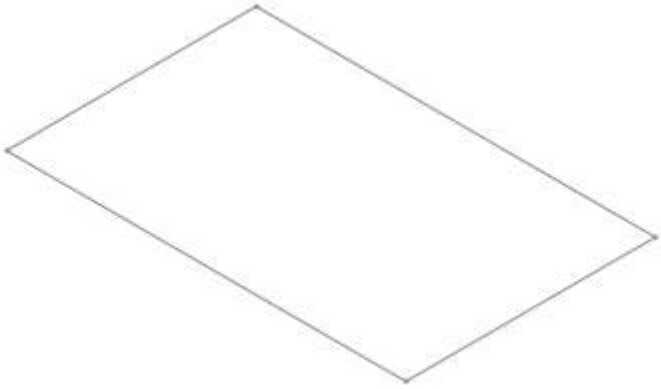
1. A computer that is running SolidWorks 2010 or higher and a connection to the Internet.

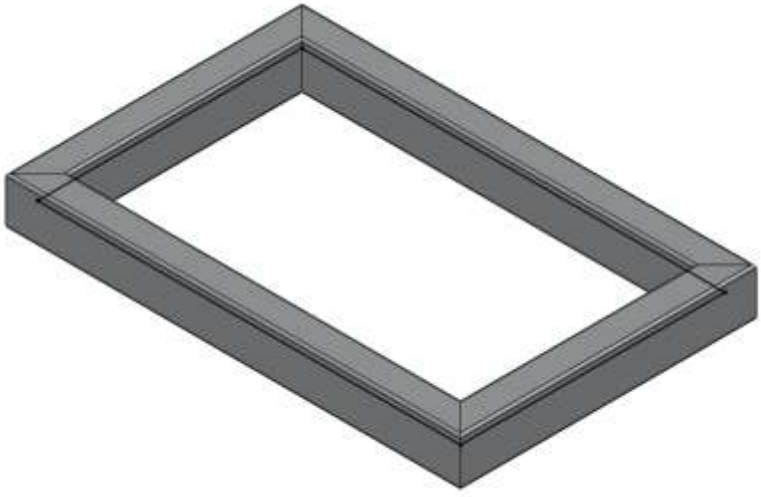
2. A double-monitor is recommended but not necessary.

3. If you will be running the Virtual Tester client on a separate computer from the one that is running SolidWorks, make sure there is a way to transfer files from one computer to the other. You will be required to download SolidWorks files during the real test to be able to correctly answer some of the questions.

Sample Exam – Weldment Profile (These images are to be used to answer Question #1)







1. Weldment Profile

Build this profile and part in SolidWorks.
Unit system: MMGS (millimeter, gram, second)
Decimal places: 2
Part origin: See Below
Material: 1060 Aluminum Alloy
Density = 0.0027 g/mm^3

-Use the following parameters and equations which correspond to the dimensions labeled in the images:

A = 60 mm
B = 90 mm

-Create a Weldment Profile as shown in the first image.

Note 1: The center of the Weldment Profile will be located at the origin.

Note 2: Ensure that the profile has pierce points at the midpoint of each external horizontal and vertical line.

-Name the Weldment Profile "WLDM-EX1" and save it in the Weldment Profile library so that it can be used to create Weldment parts.

-Open the file “A.sldprt”. This file contains a rectangular 3D sketch.

-Using Weldment Profile "WLDM-EX1", create a Weldment part as shown.

Note 1: Align the center of the Weldment profile to the 3D sketch.

Note 2: Use the "End Miter" option to join all segments to each other.

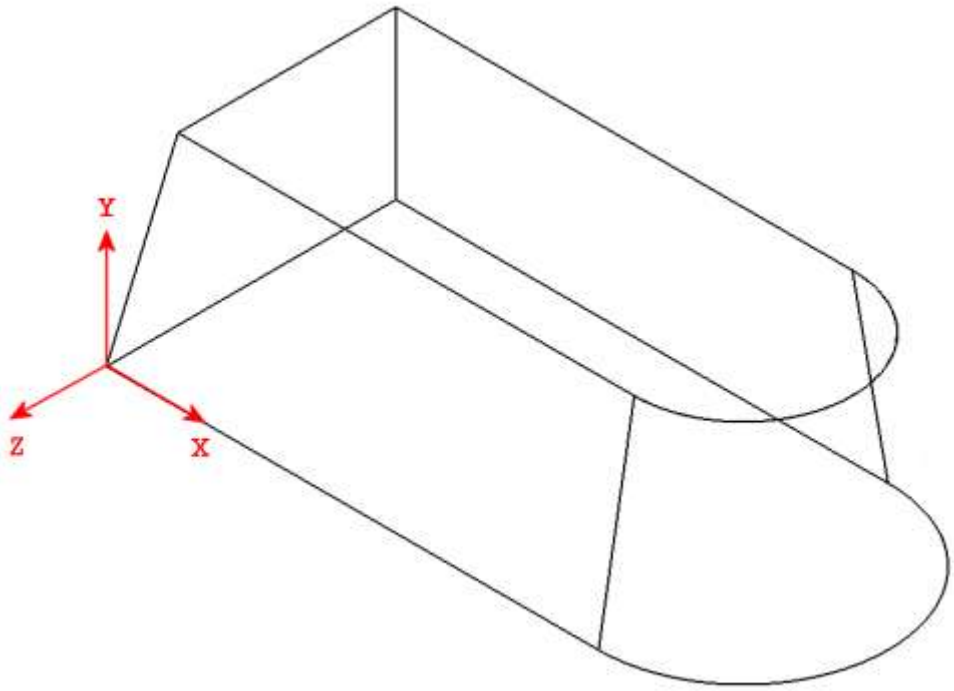
-Measure the total mass of all four segments created.

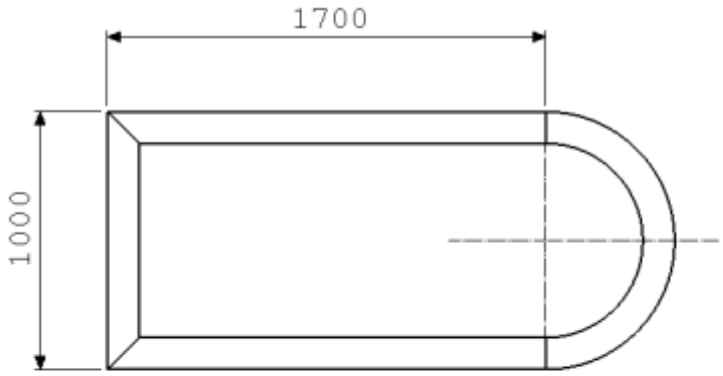
Note: Make sure to apply the proper material to the part.

What is the total mass of all four Weldment segments (grams)?

a) 6704
b) 13211
c) 18101
d) 19535

3D Sketch (These images are to be used to answer Question #2)





2. 3D Sketch Creation

Build this 3D Sketch in SolidWorks.
Unit system: MMGS (millimeter, gram, second)
Decimal places: 0
Part origin: As shown

-Build this 3D Sketch in SolidWorks using the following parameters:

Note 1: All the lowest elements can be assumed to lie on the XZ plane.

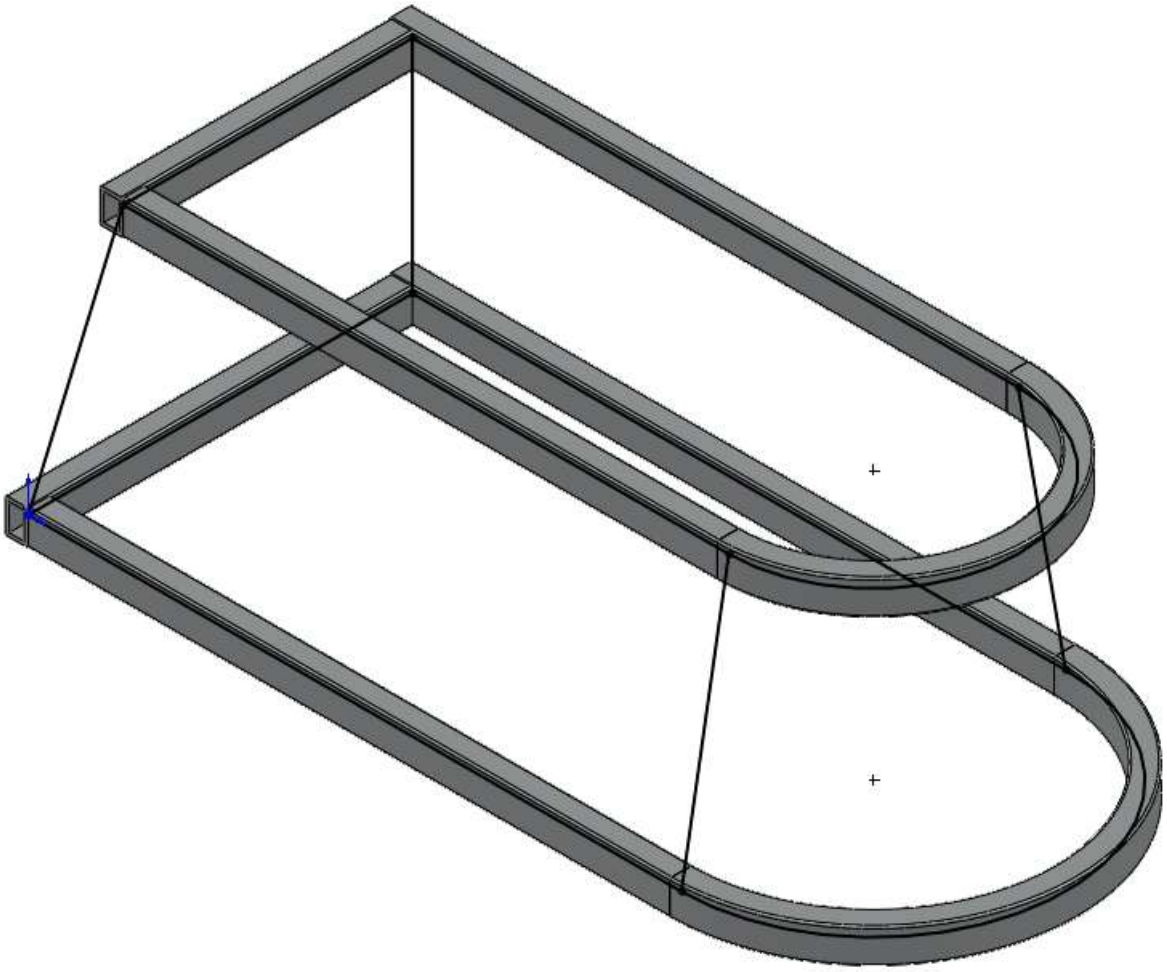
Note 2: Please refer to both dimensioned isometric images before proceeding to ensure you understand all parameters, dimensions, and relations required.

Note 3: Create the sketch in relation to the part origin as shown. This will be important for Center of Mass measurements in later questions.

-After the 3D sketch is created, select all the sketch elements and then click on Tools > Measure to display the total length of the 3D sketch elements.

What is the total length of all the 3D Sketch elements in the 3D Sketch (mm)?

Initial Part Creation (This image is to be used to answer Question #3)



3. Initial Part Creation

Build this Weldment solid in SolidWorks.
Unit system: MMGS (millimeter, gram, second)
Decimal places: 2
Material: 1060 Alloy Aluminum
Density = 0.0027 g/mm^3

-Apply the material 1060 Alloy Aluminum to this part.

-Using Weldment Profile "WLDM-EX1", create a Weldment part as shown.

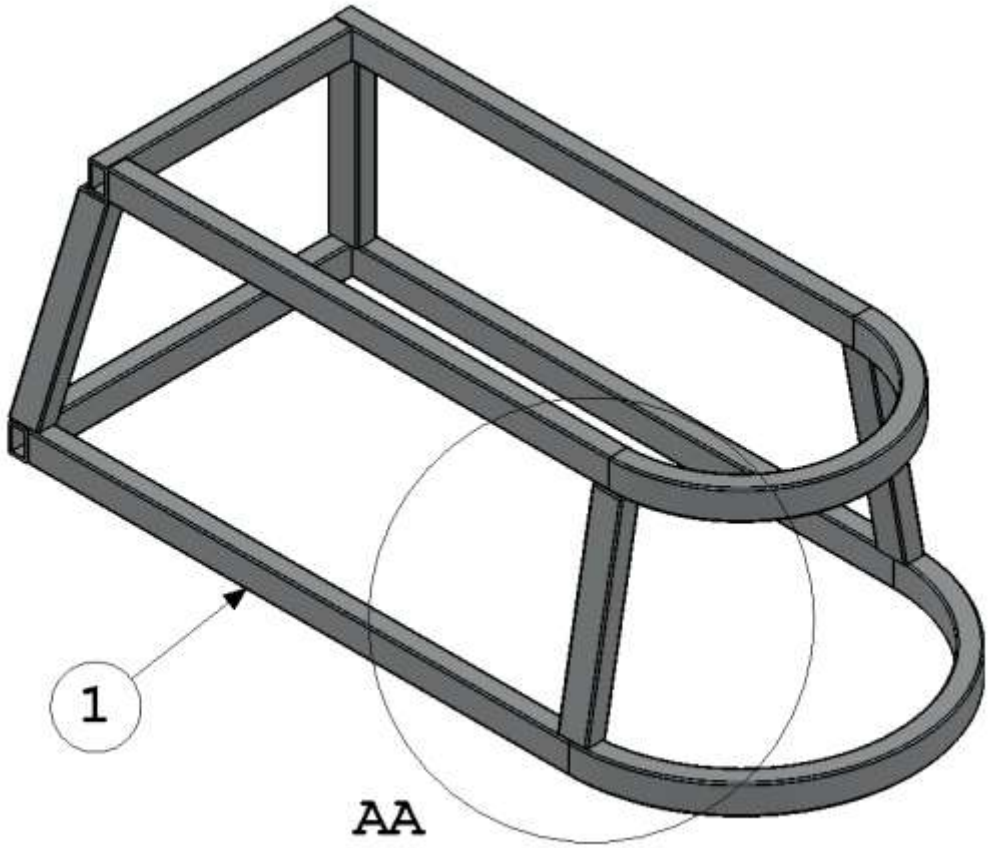
Note 1: Align the center of the Weldment profile to the 3D sketch elements.

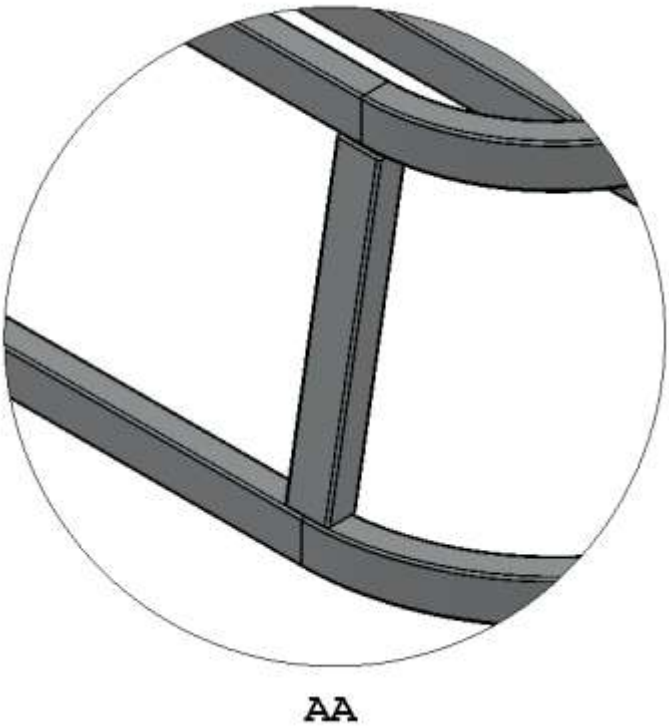
Note 2: Use the "End Butt1" corner treatment option to join all segments to each other.

-Measure the total mass of all the segments created.

What is the total mass of all the Weldment segments (grams)?

Vertical Legs Creation (These images are to be used to answer Question #4)





4. Vertical Legs Creation

Build this Weldment solid in SolidWorks.
Unit system: MMGS (millimeter, gram, second)
Decimal places: 2
Material: 1060 Alloy Aluminum
Density = 0.0027 g/mm^3

-Add the four vertical legs to the Weldment part using profile "WLDM-EX1".

Note 1: Use the center of the Weldment profile to locate it on the 3D sketch.

Note 2: There will be a 0 mm gap between all segments at their intersections and corners.

Note 3: The vertical axis of the Weldment profile will be aligned with the #1 segment labeled in the image above.

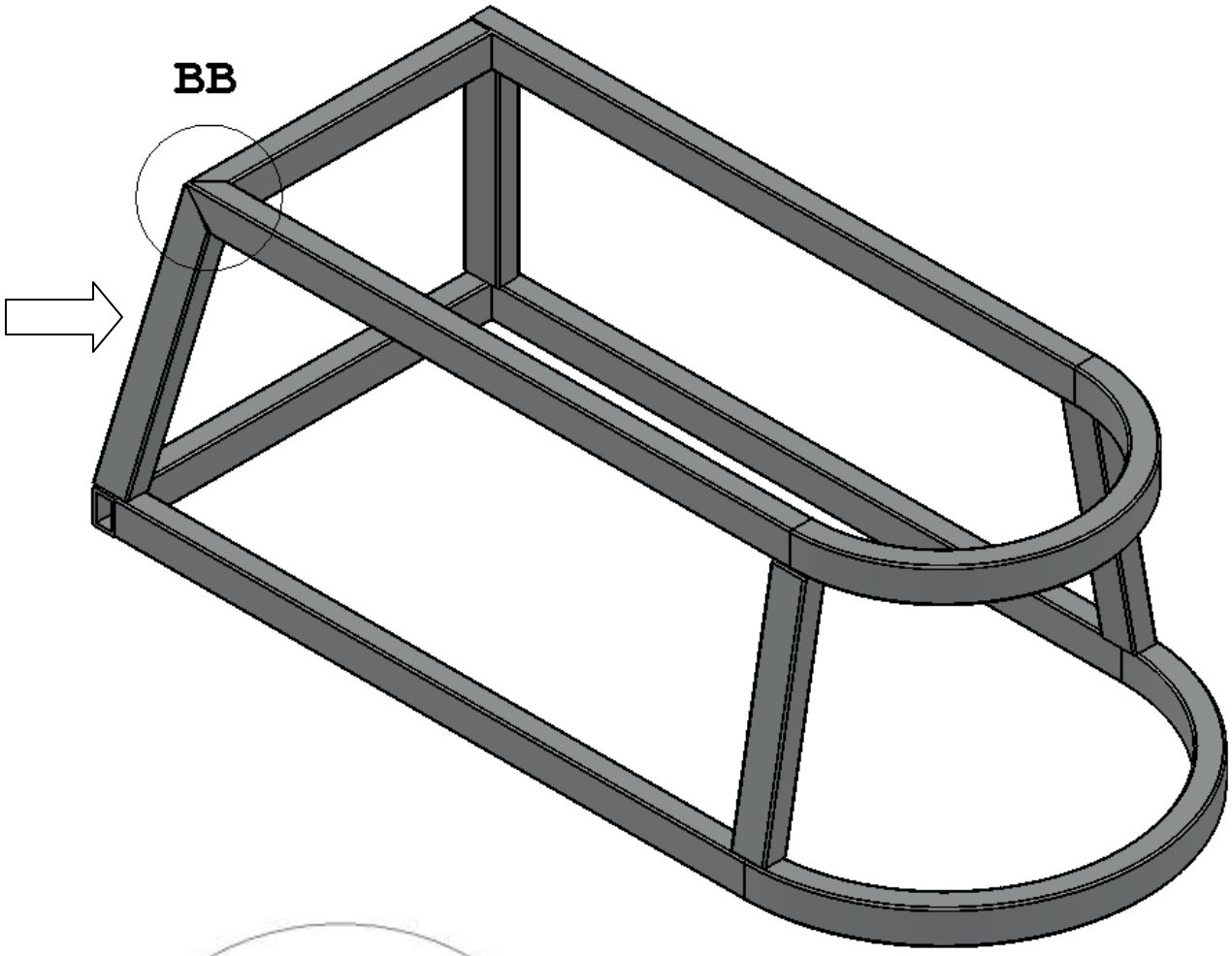
Note 4: The vertical legs will be trimmed cleanly to the lower and upper Weldment segments that they contact.

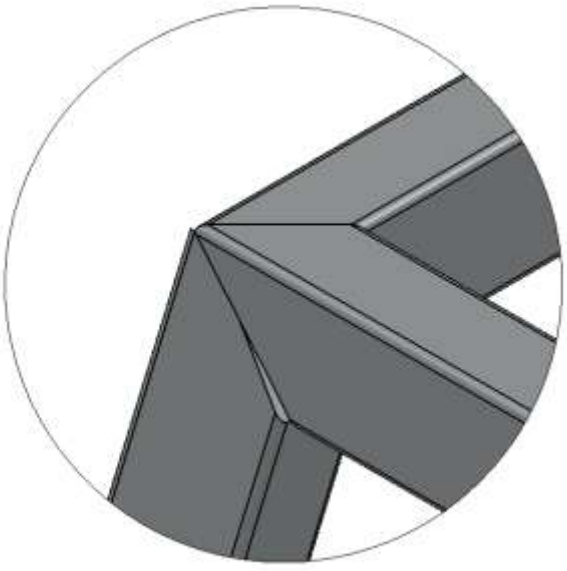
-Measure the total mass of ALL the segments in the Weldment part.

What is the total mass of all the Weldment segments (grams)?

a) 34955
b) 94379
c) 102224
d) 36766

3 Segment Corner Miter (These images are to be used to answer Question #5)





BB

5. 3 Segment Corner Miter

-Modify the corner indicated by Detail BB so that all three segments meet together in a mitered corner.

-Select the one vertical leg at this corner indicated in the image above and measure its mass. SELECT ONLY THIS SEGMENT.

What is the mass of the selected vertical leg (grams)?

Answers and Hints

1. c) 18101
2. 13924.58
3. 77001.15
4. b) 94379
5. 4602.09

DISCLAIMER: IT IS UP TO YOU TO RESEARCH THESE HINTS. BEING A PROFESSIONAL LEVEL CERTIFIED SOLIDWORKS USER SHOULD ALSO INCLUDE THE ABILITY TO RESEARCH SOLIDWORKS FUNCTIONALITY. CONSULT HELP, YOUR VAR AE'S, THE ON-LINE FORUMS OR BLOGS. NO ANSWERS WILL BE SHARED BY THE CERTIFICATION TEAM!

Hint #1:

In the real exam, there will be multiple problem scenarios. Each scenario will contain 2 to 5 questions. Each set of questions are usually cumulative regarding the problem being given. In these sets of questions are some questions with multiple choice answers and some where you supply the answer in a field. To avoid the situation where a mistake made in an early question negatively affects all the later questions, pay attention to the questions that have multiple choice answers. If your answer matches none of the answers provided, then you most likely made an error at that question or any of the non-multiple choice questions previous. These multiple choice questions will serve as a check.

Hint #2:

If you have learned the Weldments functionality prior to the 2009 SolidWorks release, then spend some time reviewing the Weldments functionality. Many new capabilities were added after the 2008 release.