SolidWorks Corporation: CSWP Advanced Sheet Metal Sample Exam

<u>Certified SolidWorks Professional:</u> Advanced Sheet Metal (CSWP-SMTL)

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-SMTL 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. 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.

4. A "passing" grade for this sample exam is 5 out of 6 questions correct in 30 minutes or less. Please understand that the real test is more difficult and is more expansive than this sample test.

What you will need for the real CSWP exam:

1. A computer that is running SolidWorks 2011 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 – Primary part

These questions are similar to the Primary Part portion of the CSWP-SMTL exam.
Use the images below for questions #1-5
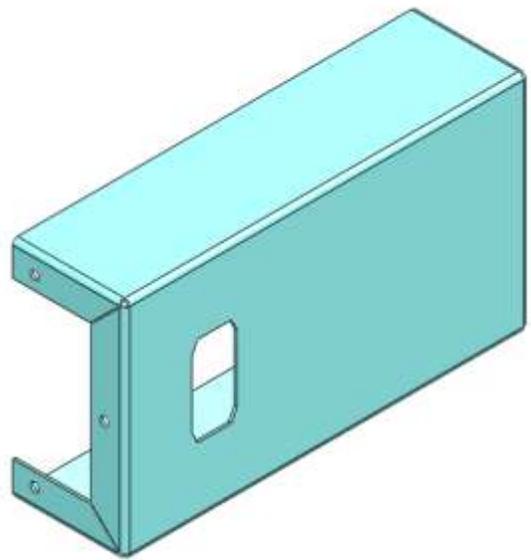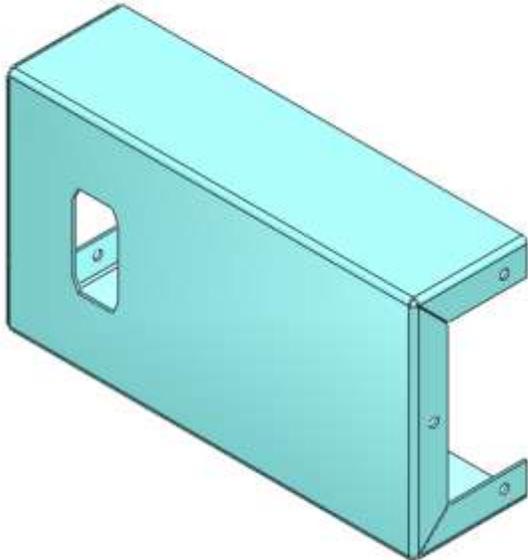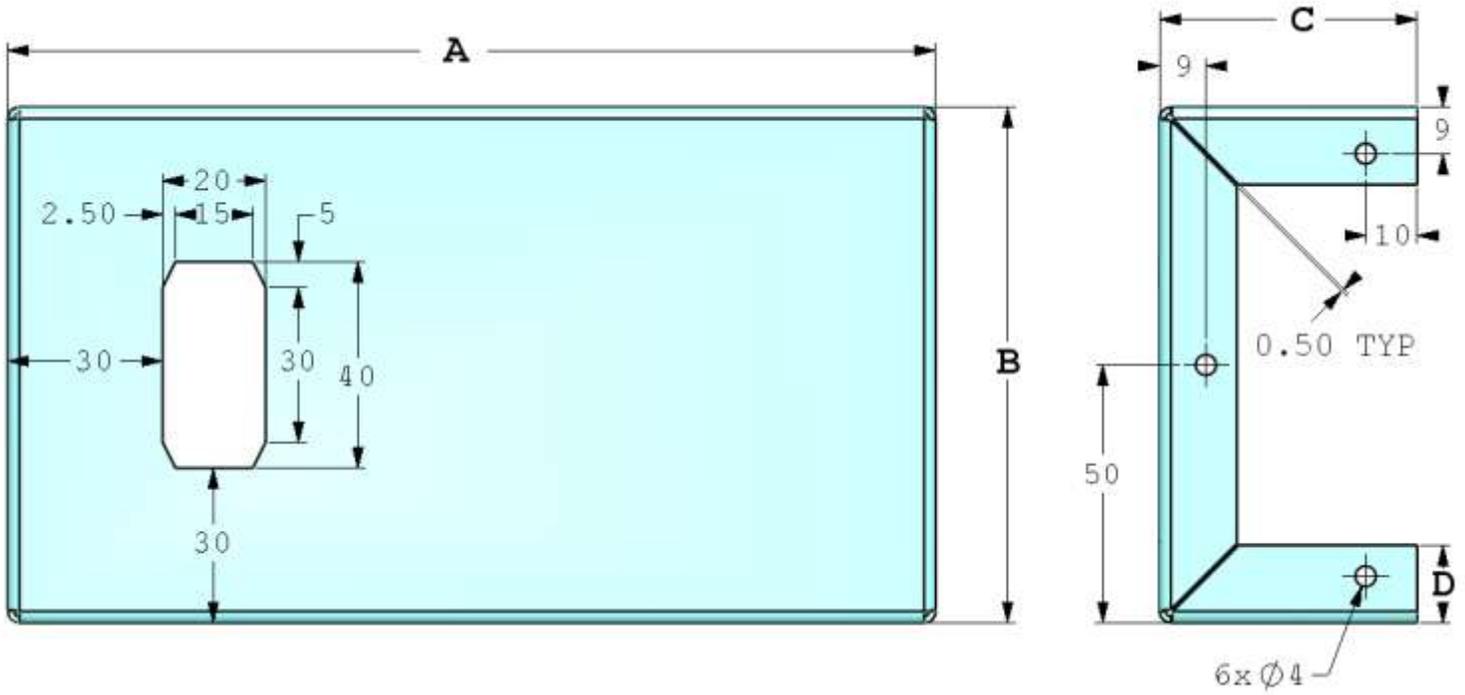
SolidWorks Corporation: CSWP Advanced Sheet Metal Certification Sample Exam

Question 1:
Design this part in SolidWorks using Sheet Metal features
Unit system: MMGS (millimeter, gram, second)
Decimal places: 2
Part Origin: Arbitrary
Part Material: Aluminum, 1060 Alloy
Material Density: 0.0027 g/mm^3
Sheet Metal Thickness: 1.20 mm
Inner Bend Radius: 1.00 mm
Trim Side Bends = ON (If applicable)

A = 180   B = 100   C = 50   D = 15

-Measure the mass of the part.

What is the overall mass of the part (grams)?

Question 2:
Design this part in SolidWorks using Sheet Metal features
Unit system: MMGS (millimeter, gram, second)
Decimal places: 2
Part Origin: Arbitrary
Part Material: Aluminum, 1060 Alloy
Material Density: 0.0027 g/mm^3
Sheet Metal Thickness: 1.20 mm
Inner Bend Radius: 1.00 mm
Trim Side Bends = ON (If applicable)

A = 200   B = 110   C = 40   D = 18

-Measure the mass of the part.

What is the overall mass of the part (grams)?

Question 3:

Design this part in SolidWorks using Sheet Metal features

Unit system: MMGS (millimeter, gram, second)

Decimal places: 2

Part Origin: Arbitrary

Part Material: Aluminum, 1060 Alloy

Material Density: 0.0027 g/mm^3

Sheet Metal Thickness: 1.20 mm
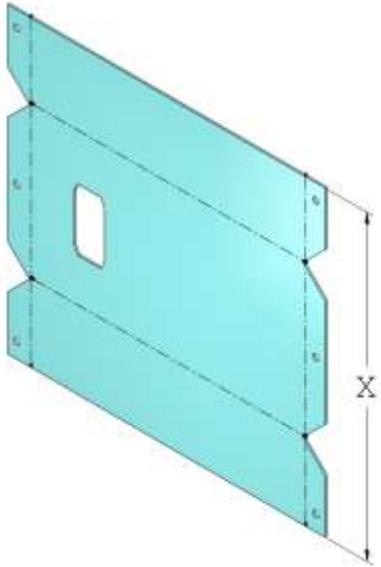
Inner Bend Radius: 1.00 mm

Trim Side Bends = ON (If applicable)

-Apply a K-Factor of 0.40 and flatten the part

A = 180   B = 100   C = 50   D = 15

-Measure the indicated distance X as seen in the image.

What is the measured distance (X) of the part (mm)?

Question 4:
Design this part in SolidWorks using Sheet Metal features
Unit system: MMGS (millimeter, gram, second)
Decimal places: 2
Part Origin: Arbitrary
Part Material: Aluminum, 1060 Alloy
Material Density: 0.0027 g/mm^3
Sheet Metal Thickness: 1.20 mm
Inner Bend Radius: 1.00 mm
Trim Side Bends = ON (If applicable)

-Apply a K-Factor of 0.32 and flatten the part

A = 200   B = 110   C = 40   D = 18

-Measure the indicated distance X as seen in the image.

What is the measured distance (X) of the part (mm)?

Question 5:
Design this part in SolidWorks using Sheet Metal features
Unit system: MMGS (millimeter, gram, second)
Decimal places: 2
Part Origin: Arbitrary
Part Material: Aluminum, 1060 Alloy
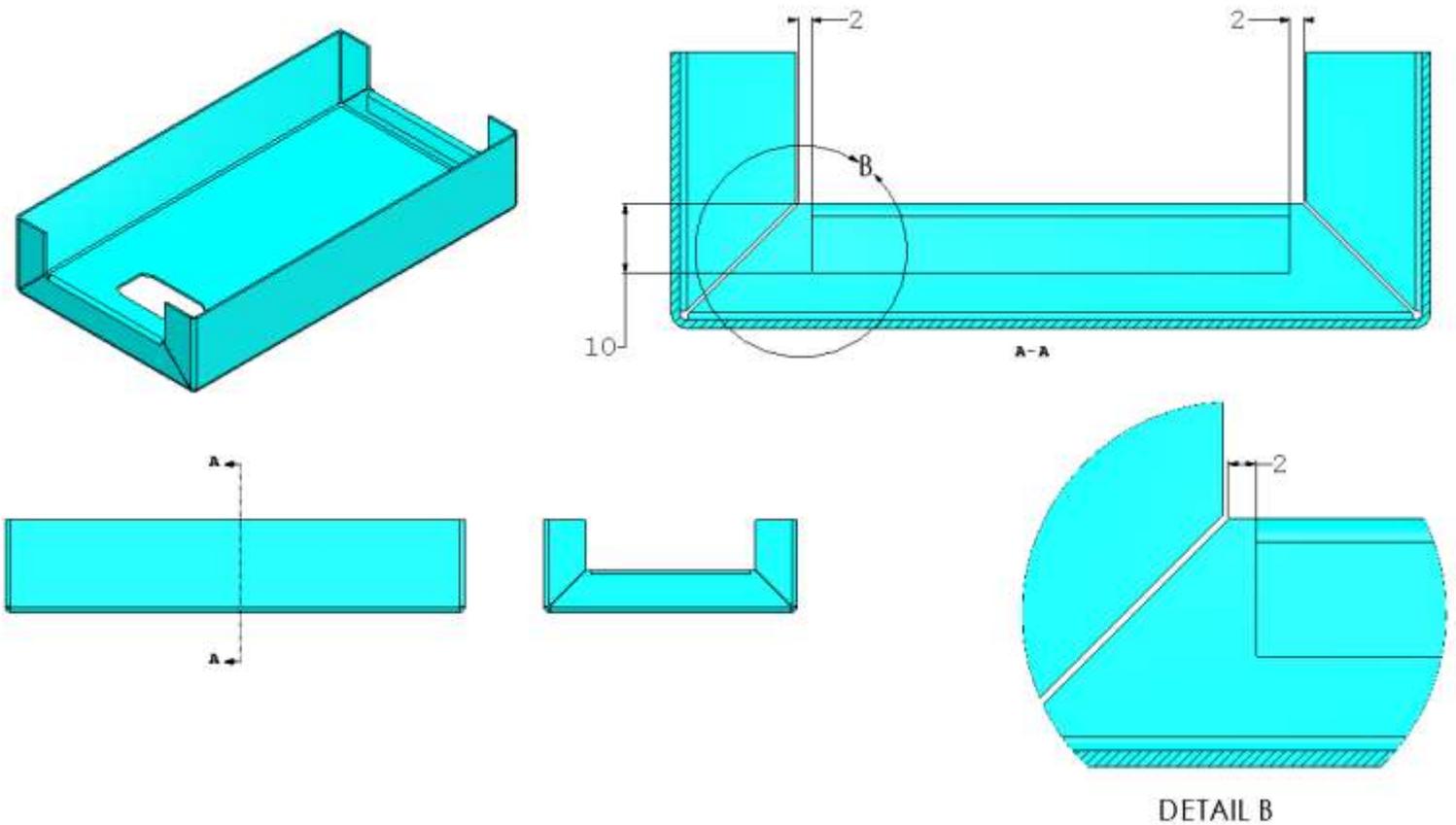Material Density: 0.0027 g/mm^3
Sheet Metal Thickness: 1.20 mm
Inner Bend Radius: 1.00 mm
Trim Side Bends = ON (If applicable)

-Using the same parameters as given in Question 4, measure the Bounding Box Area of the part

What is the Bounding Box Area of the part (mm^2)?

Use the images below for question #6

A-A

DETAIL B

Question 6:
Design this part in SolidWorks using Sheet Metal features
Unit system: MMGS (millimeter, gram, second)
Decimal places: 2
Part Origin: Arbitrary
Part Material: Aluminum, 1060 Alloy
Material Density: 0.0027 g/mm^3
Sheet Metal Thickness: 1.20 mm
Inner Bend Radius: 1.00 mm
Hem Gap Distance: 1.00mm

-Remove the round holes in the flanges of the part
-Create two symmetrical hems bent into the interior of the part as shown
-Using the parameters given in Question 4, measure the mass of the part

What is the mass of the part (grams)?

Answers and Hints

1. 125.60 grams +/- 0.50 grams
2. 133.37 grams +/- 0.50 grams
3. 195.85 mm +/- 0.50 mm
4. 185.55 mm +/- 0.50 mm
5. 42963.25 mm^2 +/- 100 mm^2
6. 138.13 grams +/- 0.50 grams

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 Sheet Metal functionality prior to the 2008 SolidWorks release, then spend some time reviewing the Sheet Metal functionality. Many new capabilities were added after the 2008 release.