

SOLIDWORKS Certification Exam Guide & Practice Test



**CSWP: Certified
SOLIDWORKS Professional**

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About This Guide

This guide contains information, advice, and practice for becoming a Certified SOLIDWORKS Professional. Here, you will find:

- An overview of SOLIDWORKS Certifications
- Details about the CSWP Exam
- Advice on preparing for and taking the CSWP Exam
- A Practice CSWP Segment 1 Exam and answer key
- Directions to useful SOLIDWORKS websites

The CSWP Certification

SOLIDWORKS Certifications are a benchmark to measure your knowledge and competency with SOLIDWORKS software. A certification helps you stand out from the crowd and showcases your expertise to businesses and professionals alike—a valuable asset in a competitive job market.

A few popular SOLIDWORKS Certifications include:

- CSWA: Certified SOLIDWORKS Associate
- CSWP: Certified SOLIDWORKS Professional
- CSWPA: Certified SOLIDWORKS Professional Advanced:
 - Sheet Metal
 - Weldments
 - Surfacing
 - Mold Tools
 - Drawing Tools
- CSWE: Certified SOLIDWORKS Expert
- CEPA: Certified Enterprise PDM Administrator

Why take the CSWP Exam?

The CSWP certification sets you apart as a person who has surpassed the basic skills of SOLIDWORKS and who has developed an advanced understanding of the software. Achieving certification establishes you as a highly competent professional in the use of SOLIDWORKS. For hiring managers, it acts as a valuable assessment to attest for an individual's competency, thereby reducing the amount of time and energy required to research prospective candidates.

Passing the CSWP, alongside four of the five CSWPA exams, is a prerequisite for taking the CSWE Exam to become a Certified SOLIDWORKS Expert.

All candidates receive electronic certificates, business card logos, and personal listing in the CSWP directory when they pass.

CSWP Exam Details

Each of the three segments are purchased as separate exam credits (they may be purchased as a three-part bundle) and are taken in separate sittings.

Total Exam Length: 3 hours 20 minutes (All segments)

Minimum Passing grade: See details below

Re-test Policy: There is a minimum 14 day waiting period between every attempt of the same CSWP Segment exam. Also, an exam credit for that CSWP Segment must be purchased for each exam attempt.

The following is the topic and question breakdown of the CSWP exam:

Segment 1:

70 Minutes – 75 points to pass/105 points maximum

- Creating a part from a drawing
- Using linked dimensions and equations to aid in modeling
- Using equations to relate dimensions
- Updating parameters and dimension sizes
- Mass property analysis
- Modifying geometry on initial part to create a more complex part
- Modifying parameters on the part at different stages while maintaining all other dimensions and design intent

Segment 2:

50 Minutes – 77 points to pass/104 points maximum

- Creating configurations from other configurations
- Changing configurations
- Creation of configurations using a Design Table
- Mass properties
- Changing and/or rearranging features of an existing SOLIDWORKS part

Segment 3:

80 Minutes - 77 points to pass/109 points maximum

- Creating an assembly
- Adding parts to an assembly
- Doing collision detection when moving a part in an assembly
- Interference detection

- Basic and advanced mates
- Rigid and Flexible subassemblies
- Replacing a part with another part in an assembly
- Creating a coordinate system
- Using a coordinate system to perform mass properties analysis

Standard SOLIDWORKS tools that may be covered in the exam include:

- Sketch entities - lines, rectangles, circles, arcs, ellipses, centerlines
- Sketch tools - offset, convert, trim
- Sketch relations
- Boss and cut features - extrudes, revolves, sweeps, lofts
- Fillets and chamfers
- Draft
- Shell
- Hole Wizard
- Linear, circular, and fill patterns
- Linked dimensions
- Equations
- Mirror
- Dimensions
- Feature conditions – start and end
- Multi-body parts
- Rib
- Feature scope
- Mass properties
- Move/Delete face
- Materials
- Restraints
- Inserting components - new and existing
- Standard mates and advanced mates
- Reference geometry – planes, axis, mate references
- In-context features
- Interference detection
- Suppression states
- Move/Rotate component
- Assembly features

- Collision detection in an assembly
- External references
- Design tables
- Dimensions and model items

How to Prepare for the Exam

Don't let the exam questions take you by surprise! We recommend that you practice the skills in the "CSWP Exam Details" section above, and that you ask for help from experienced SOLIDWORKS users.

No details to the solutions for either this sample exam or the real test will be shared by the SOLIDWORKS Certification team. Please consult your SOLIDWORKS reseller, your local user group, or the on-line SOLIDWORKS forums at forum.solidworks.com to review any topics on the CSWP exam.

A great resource is the SOLIDWORKS website (SOLIDWORKS.com).

- For training courses, go to **Home > Support > Training > SOLIDWORKS Courses**.
- To download models to practice on, go to **Home > Support > Training > SOLIDWORKS Training Files**
- You'll find a wealth of access to videos, tutorials, blogs, events, and fellow users in the SOLIDWORKS Community at **Home > Resource Center**

You can also log into my.solidworks.com to browse lessons, forums, models, and much more.

Last but not least, make use of this exam guide to review realistic exam questions, look over important topics, and familiarize yourself with the exam procedure.

To simulate test conditions, you can take the sample exam in the testing client software. For instructions, go to the 'Taking the Real Exam' section.

The practice exam enclosed within is designed to give you a preview of the CSWP without disclosing the entirety of the test. Thus, we've provided questions that are typical to the hardest segment – Segment 1 – of the exam.

How to Take This Practice Exam

1. You must be running SOLIDWORKS on the computer, both for the practice and actual test. SOLIDWORKS can only be installed with the Windows operating system.
2. Excel should be installed on the computer you are running SOLIDWORKS to ensure that your Design Table functionality works properly for the exam.
3. To simulate real conditions, it is best NOT to print this exam.
In the real test, the VirtualTester client window runs concurrently with SOLIDWORKS, requiring you to switch between applications. Keep this document open and consult it while running SOLIDWORKS.
4. After each question, save a version of your model in a different file for later reference. This may also help you fix errors later on in the test.
5. The multiple choice will help you check that your model is on the right track. If your answer is not listed in the selections offered, it is likely that there is something wrong with your model.
6. This guide includes an answer key after the practice exam.
7. Dimensions are circled in some images to indicate new or altered dimensions.
8. This practice exam is also available to take for free on-line in the testing client software. To take the exam in the client software, follow the instructions in the next section.

Taking the Real Exam

The real exam can be taken on your personal computer at a time of your choosing. The CSWP Exam is administered through the Tangix TesterPRO Client, an application that you may download from the SOLIDWORKS VirtualTester website. You will need a connection to the Internet throughout the exam.

The sample exam in this packet can also be taken in the Tangix TesterPRO Client.

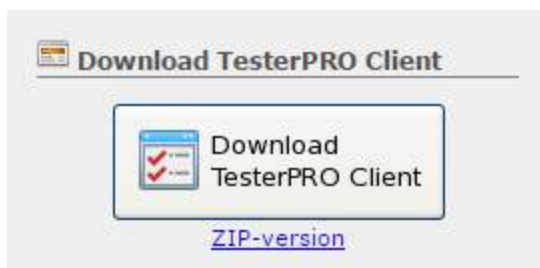
If you will be running the client on a separate computer from the one that is running SOLIDWORKS, make sure there is a way to transfer files from one computer to the other. You will be required to download SOLIDWORKS files during the real test to be able to correctly answer some of the questions.

To learn the testing procedure in VirtualTester, if you have a MySOLIDWORKS account, please refer to this video:

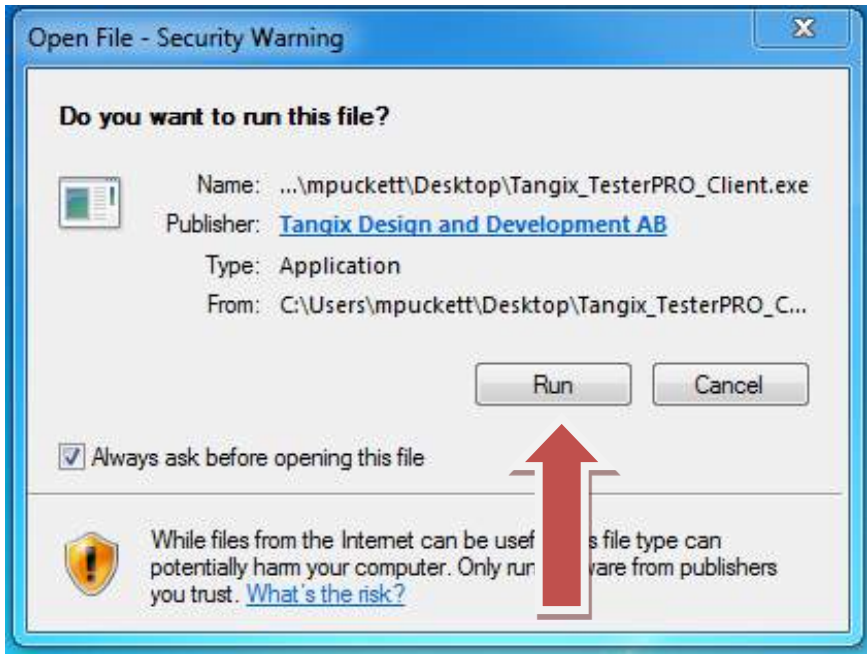
<http://my.SOLIDWORKS.com/mylearning/lessons/489/installing-and-viewing-the-test-software>

Alternatively, you may follow these steps:

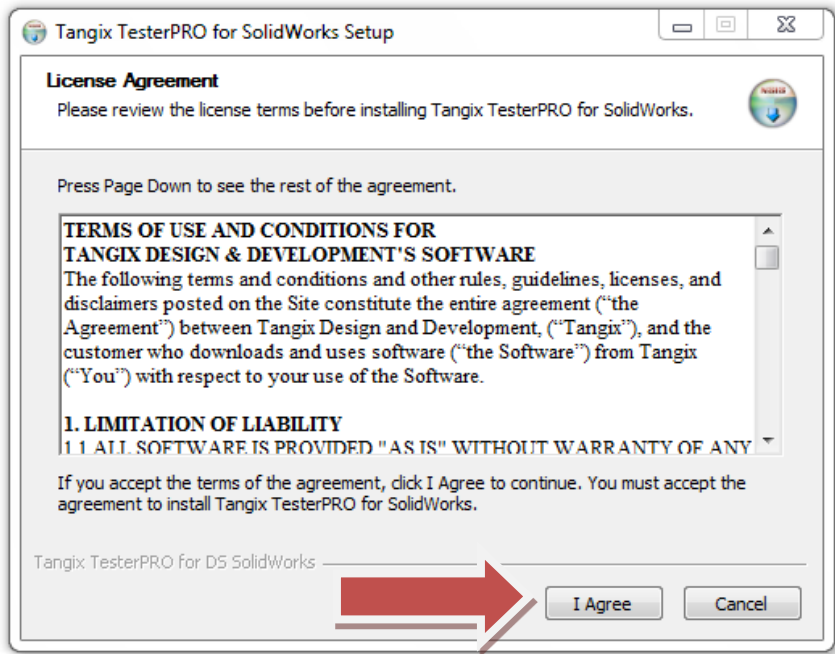
1. Visit the SOLIDWORKS VirtualTester Certification Center at <https://SOLIDWORKS.virtualtester.com/>.
2. Locate and click the button (right hand side of page) to download the Tangix TesterPRO Client:



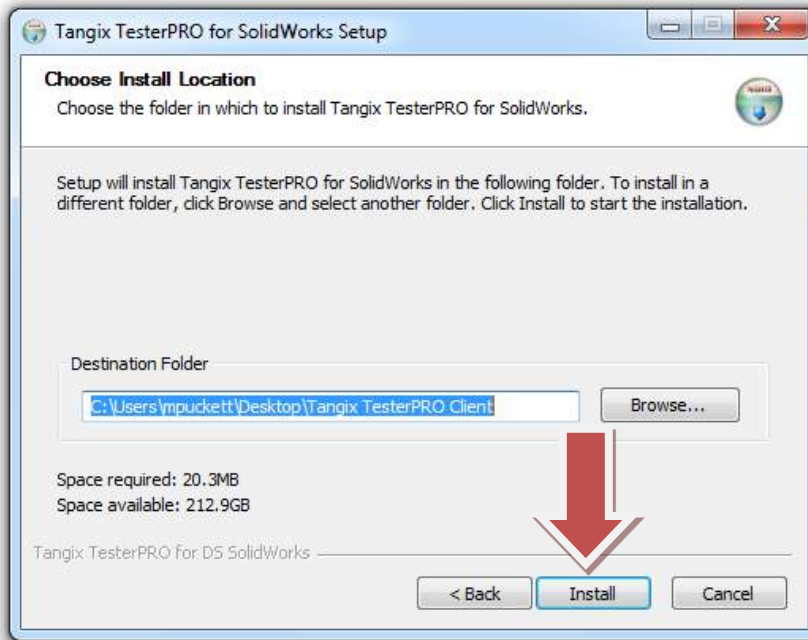
3. Open the downloaded folder and run the executable file:



4. Agree to the License Agreement.



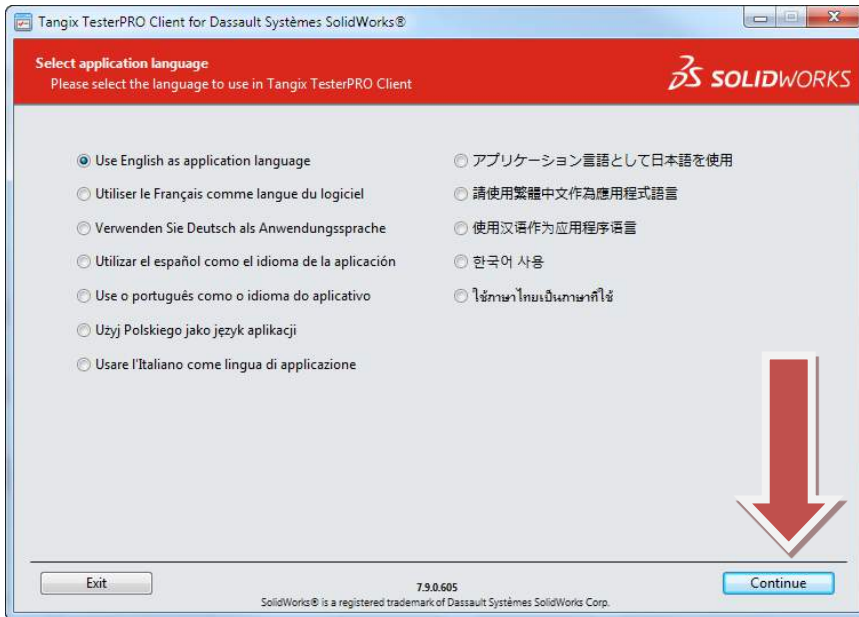
5. Click the install button.



6. Click the finish button.

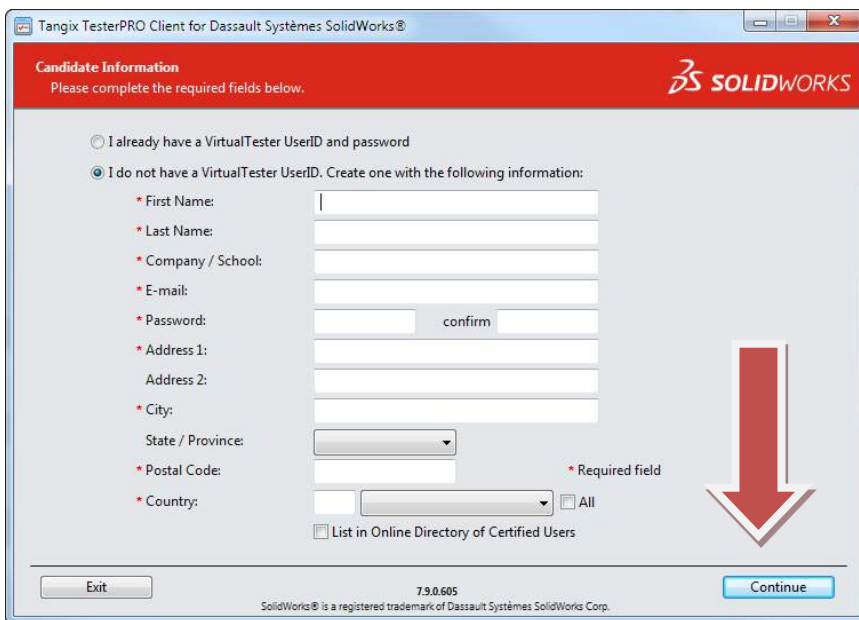


7. When you run the program, select your language and click Continue.



If you have already taken a SOLIDWORKS Certification Exam, skip to step 9.

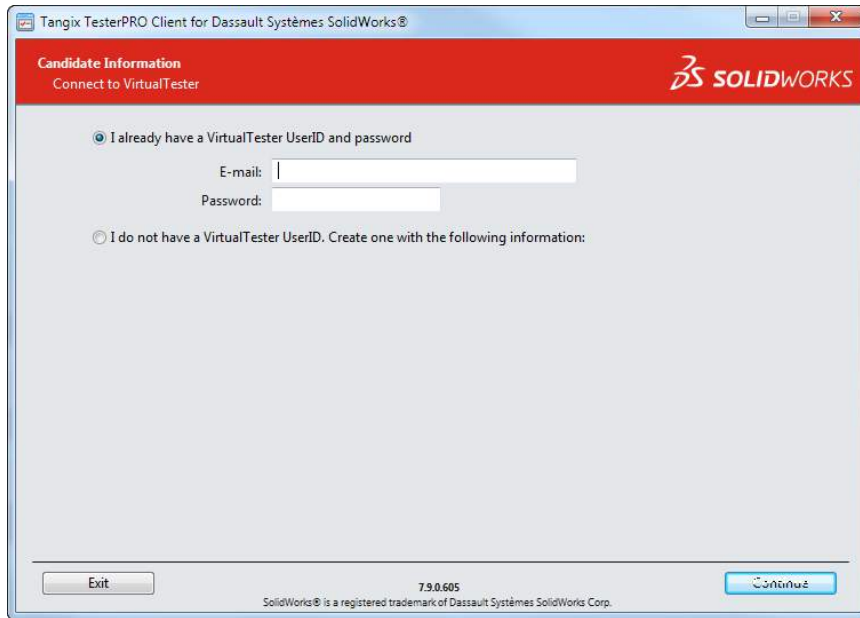
8. If this is your first exam, you will need to create an account. Fill in the required fields and click continue:



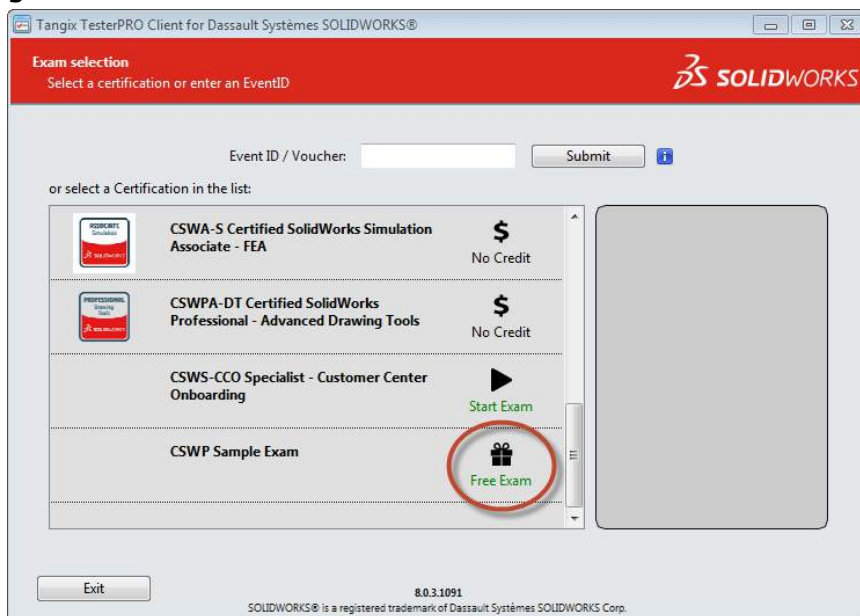
Write down your login credentials for future use!

Skip to step 10.

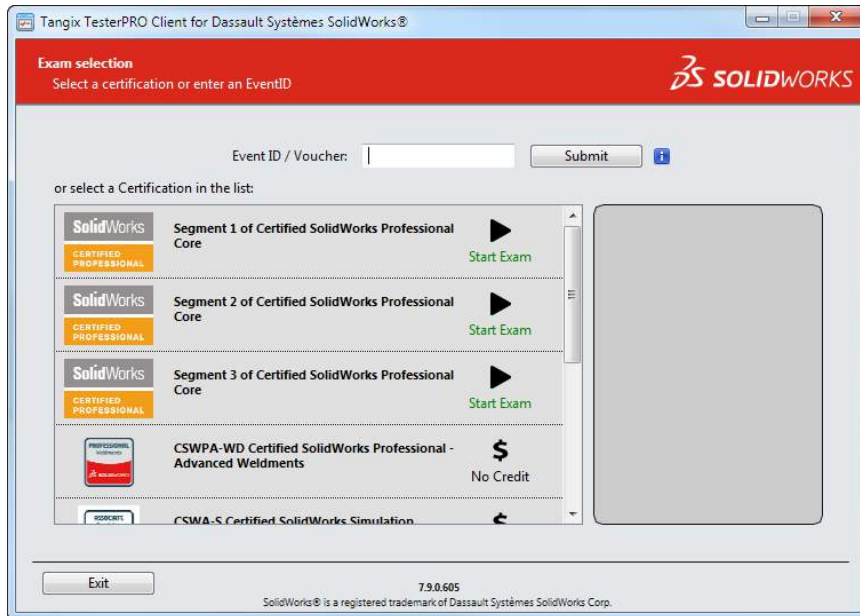
9. If you have already taken a SOLIDWORKS Certification Exam, select the option below, fill in your credentials, and click continue.



10. If you are taking a sample exam online, scroll down and select the exam with a gift icon.



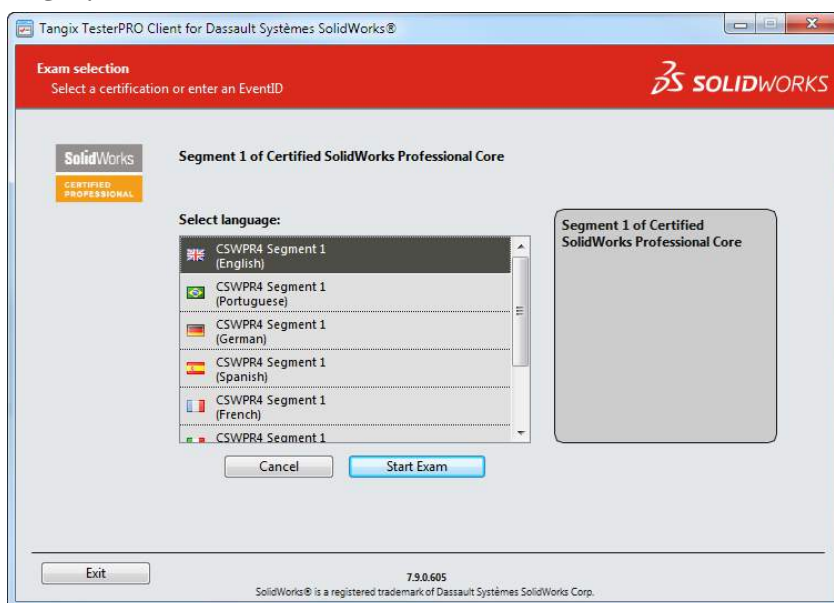
11.To take an exam from a credit, select an exam that has the words ‘Start Exam’ next to it (only exams that you have credits for will show as available):



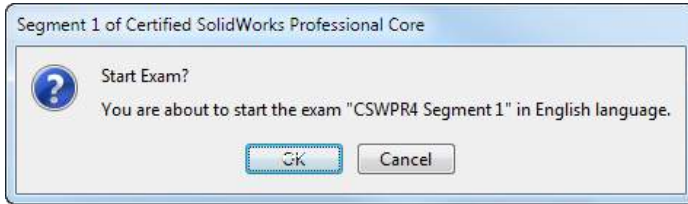
If you do not have credit for the exam, do one of the following:

- If you have an Event ID or Voucher, type it into the field on this page and click “Submit.”
- Purchase an exam credit online. This may be found on solidworks.com: Click **Support > Certification > Exam Registration**.

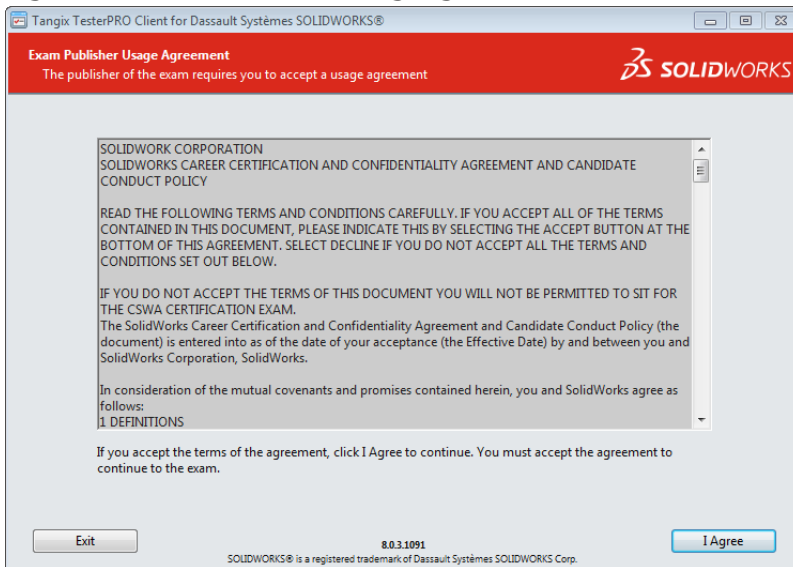
12.You may be asked to select a language. Select a language and click “Start Exam.”



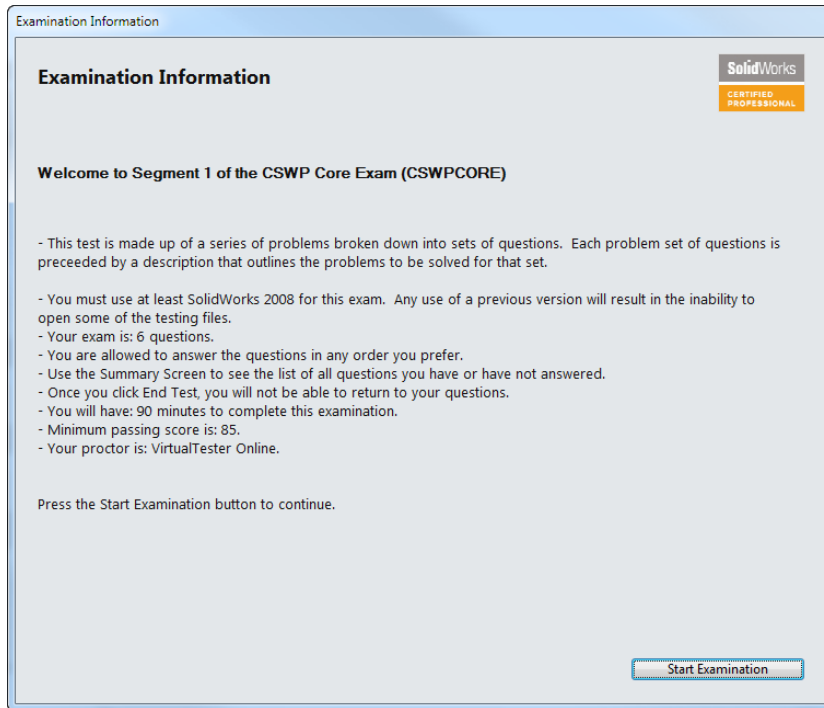
13. Confirm the exam you are about to begin:



14. Agree to the Confidentiality Agreement and Candidate Conduct Policy.



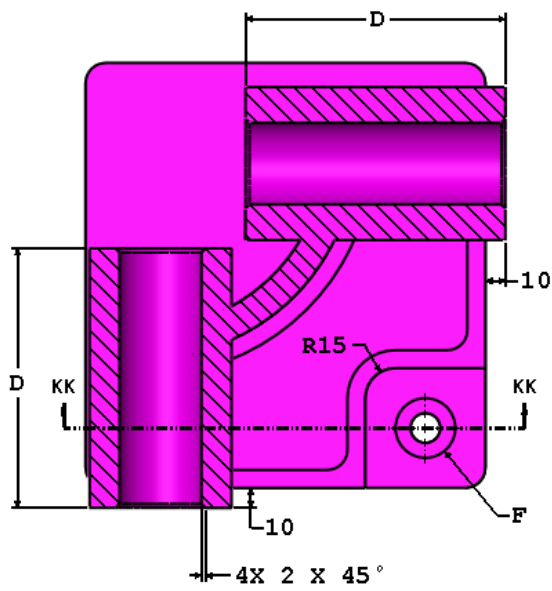
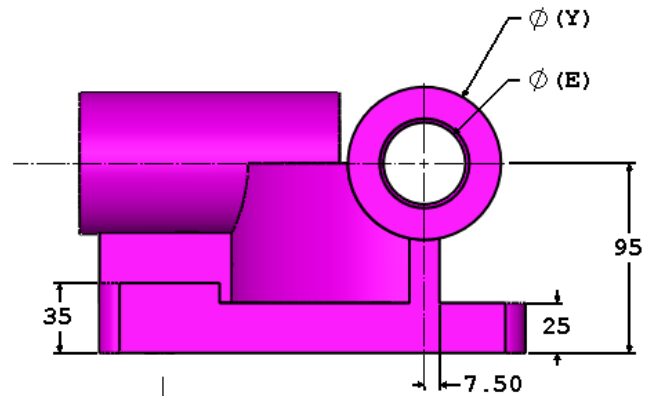
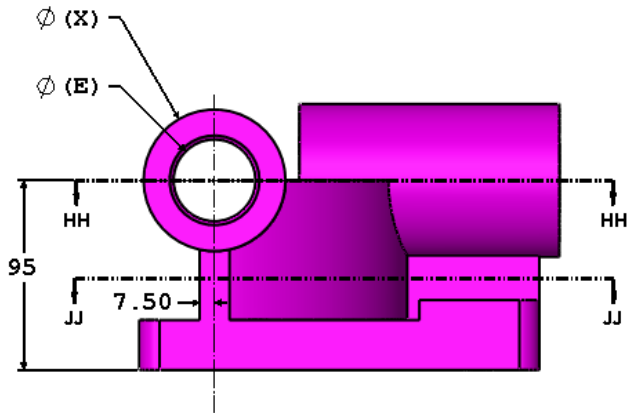
15. On the Examination Information page, read the information and then click "Start Examination", this will begin the timed portion of your exam.



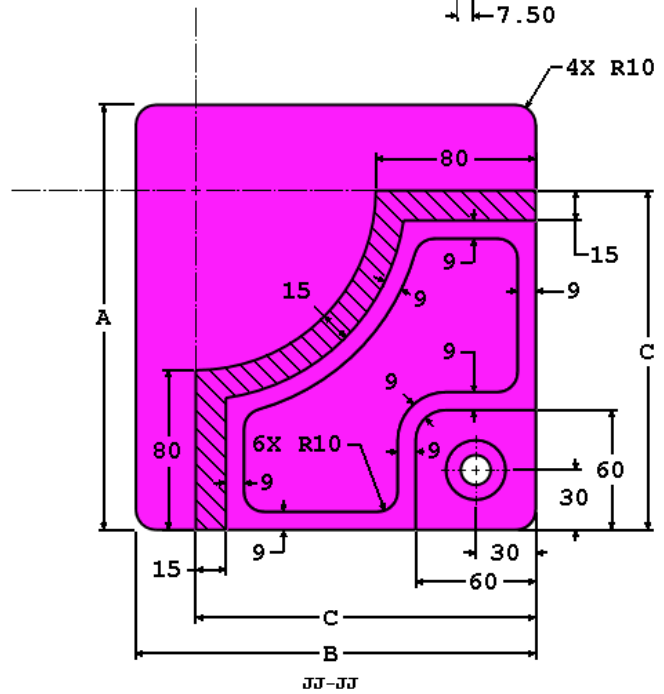
The practice exam begins on the next page.

Test Questions

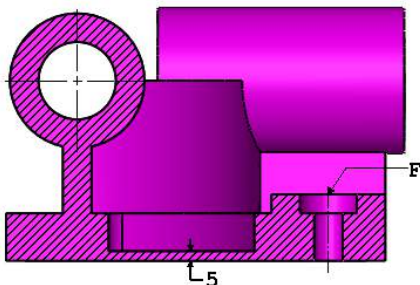
This section will give you a general idea of Segment 1 of the CSWP Exam. These images are to be used to answer Questions #1 – 3.



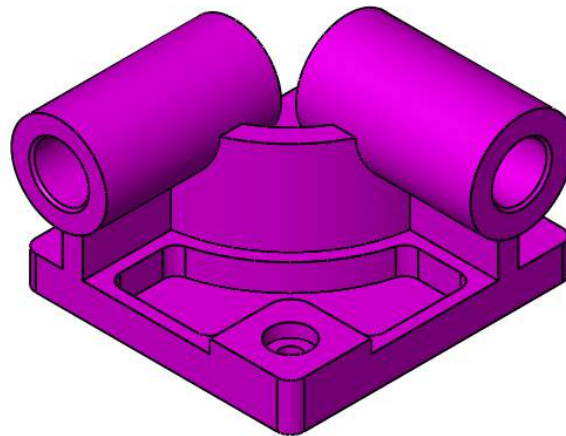
HH-HH



JJ-JJ



KK-KK



1. Stage 1 – Initial Part

Build this part in SOLIDWORKS.

Unit system: MMGS (millimeter, gram, second)

Decimal places: 2

Part origin: Arbitrary

Material: Alloy Steel

Density = 0.0077 g/mm³

All holes through all unless shown otherwise

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

A = 213 mm

B = 200 mm

C = 170 mm

D = 130 mm

E = 41 mm

F = Hole Wizard Standard: Ansi Metric Counterbore

Type: Hex Bolt – ANSI B18.2.3.5M

Size: M8

Fit: Close

Through Hole Diameter: 15.00 mm

Counterbore Diameter: 30.00 mm

Counterbore Depth: 10.00 mm

End Condition: Through All

X = A/3

Y = B/3 + 10mm

Hint 1: The dimensions that are to be linked or updated and are variable will be labeled with letters. Any dimensions that are simple value changes or refer to new features from one stage to another will be circled in the images.

Hint 2: To save the most time, make use of linked dimensional values and equations.

Measure the mass of the part.

What is the mass of the part (grams)?

- a) 14139.65
- b) 14298.56
- c) 15118.41
- d) 14207.34

2. Update parameters of the initial part.

Unit system: MMGS (millimeter, gram, second)

Decimal places: 2

Part origin: Arbitrary

Material: Alloy Steel

Density = 0.0077 g/mm³

All holes through all unless shown otherwise

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

A = 225 mm

B = 210 mm

C = 176 mm

D = 137 mm

E = 39 mm

F = Hole Wizard Standard: Ansi Metric Counterbore

Type: Hex Bolt – ANSI B18.2.3.5M

Size: M8

Fit: Close

Through Hole Diameter: 15.00 mm

Counterbore Diameter: 30.00 mm

Counterbore Depth: 10.00 mm

End Condition: Through All

$X = A/3$

$Y = B/3 + 10\text{mm}$

Hint 1: The dimensions that are to be linked or updated and are variable will be labeled with letters. Any dimensions that are simple value changes or refer to new features from one stage to another will be circled in the images.

Hint 2: To save the most time, make use of linked dimensional values and equations.

What is the mass of the part (grams)?

3. Update parameters of the initial part.

Unit system: MMGS (millimeter, gram, second)

Decimal places: 2

Part origin: Arbitrary

Material: Alloy Steel

Density = 0.0077 g/mm³

All holes through all unless shown otherwise

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

A = 209 mm

B = 218 mm

C = 169 mm

D = 125 mm

E = 41 mm

F = Hole Wizard Standard: Ansi Metric Counterbore

Type: Hex Bolt – ANSI B18.2.3.5M

Size: M8

Fit: Close

Through Hole Diameter: 15.00 mm

Counterbore Diameter: 30.00 mm

Counterbore Depth: 10.00 mm

End Condition: Through All

X = A/3

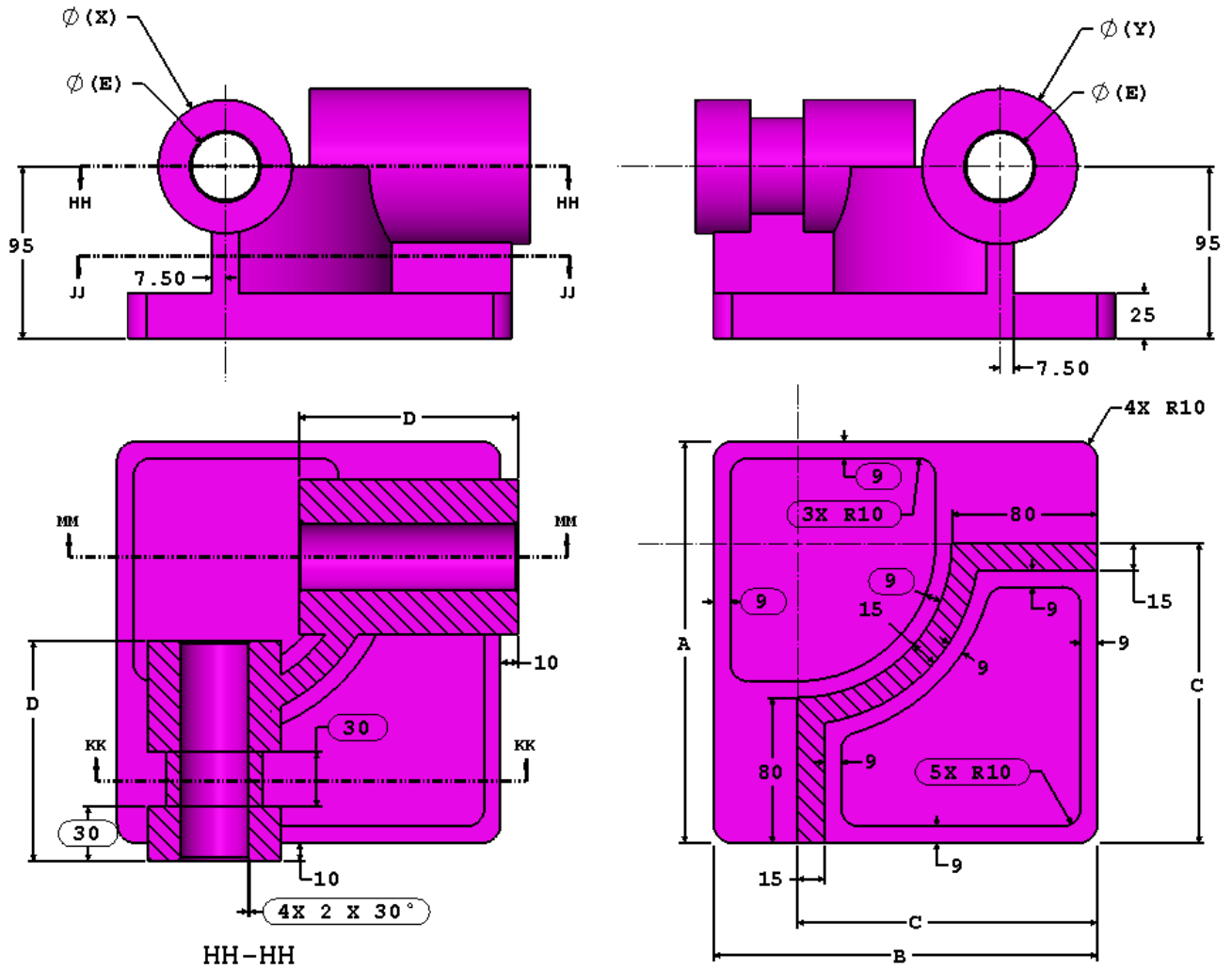
Y = B/3 + 10mm

Hint 1: The dimensions that are to be linked or updated and are variable will be labeled with letters. Any dimensions that are simple value changes or refer to new features from one stage to another will be circled in the images.

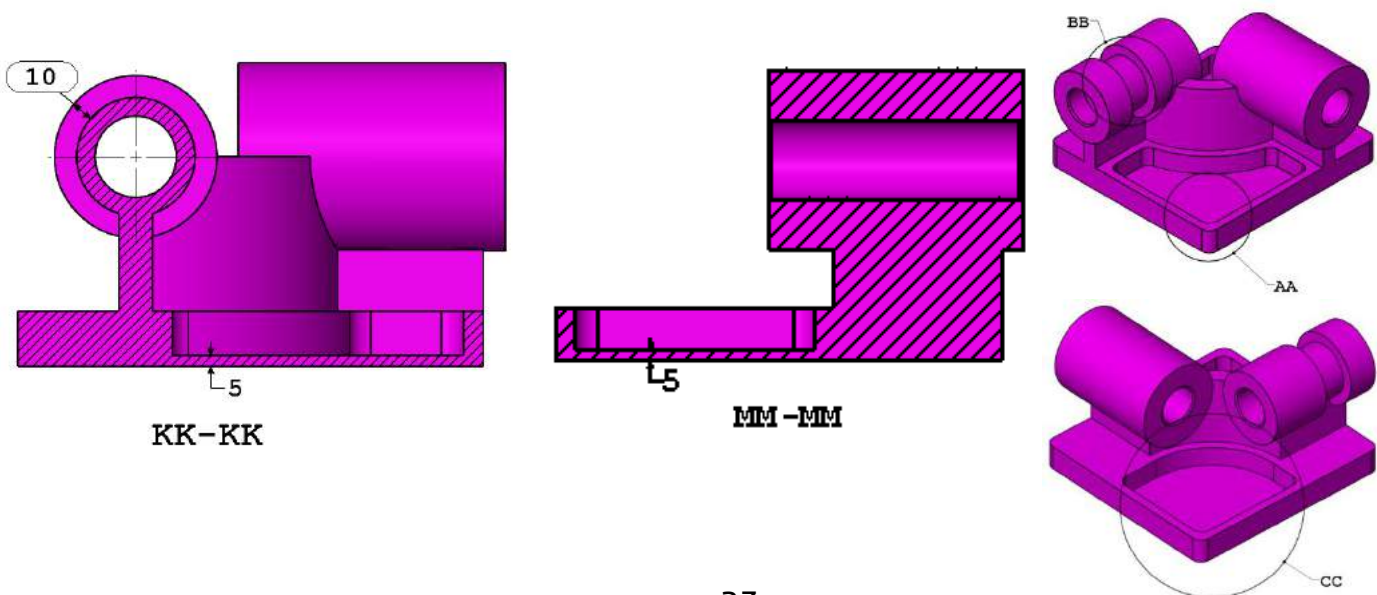
Hint 2: To save the most time, make use of linked dimensional values and equations.

What is the mass of the part (grams)?

These images are to be used to answer Questions #4 and 5.



4. Stage 2 – Modify



Modify the part using the following dimensions.

Note: The changes from the initial part are concentrated in areas AA, BB and CC shown in the images.

Unit system: MMGS (millimeter, gram, second)

Decimal places: 2

Part origin: Arbitrary

Material: Alloy Steel

Density = 0.0077 g/mm³

All holes through all unless shown otherwise

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

$$A = 221 \text{ mm}$$

$$B = 211 \text{ mm}$$

$$C = 165 \text{ mm}$$

$$D = 121 \text{ mm}$$

$$E = 37 \text{ mm}$$

$$X = A/3$$

$$Y = B/3 + 15\text{mm}$$

Note: The equation for Y has changed from the initial part.

Hint 1: The dimensions that are to be linked or updated and are variable will be labeled with letters. Any dimensions that are simple value changes or refer to new features from one stage to another will be circled in the images.

Hint 2: To save the most time, make use of linked dimensional values and equations.

Measure the mass of the part.

What is the mass of the part (grams)?

- a) 13095.40
- b) 13206.40
- c) 13313.35
- d) 13395.79

5. Stage 2 – Update Parameters

Unit system: MMGS (millimeter, gram, second)

Decimal places: 2

Part origin: Arbitrary

Material: Alloy Steel

Density = 0.0077 g/mm³

All holes through all unless shown otherwise

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

$$A = 229 \text{ mm}$$

$$B = 217 \text{ mm}$$

$$C = 163 \text{ mm}$$

$$D = 119 \text{ mm}$$

$$E = 34 \text{ mm}$$

$$X = A/3$$

$$Y = B/3 + 15 \text{ mm}$$

Hint 1: The dimensions that are to be linked or updated and are variable will be labeled with letters. Any dimensions that are simple value changes or refer to new features from one stage to another will be circled in the images.

Hint 2: To save the most time, make use of linked dimensional values and equations.

Measure the mass of the part.

What is the mass of the part (grams)?

END OF TEST

Answer Key

1. d) 14207.34
2. 16490.45
3. 15100.47
4. b) 13206.40
5. 14208.00

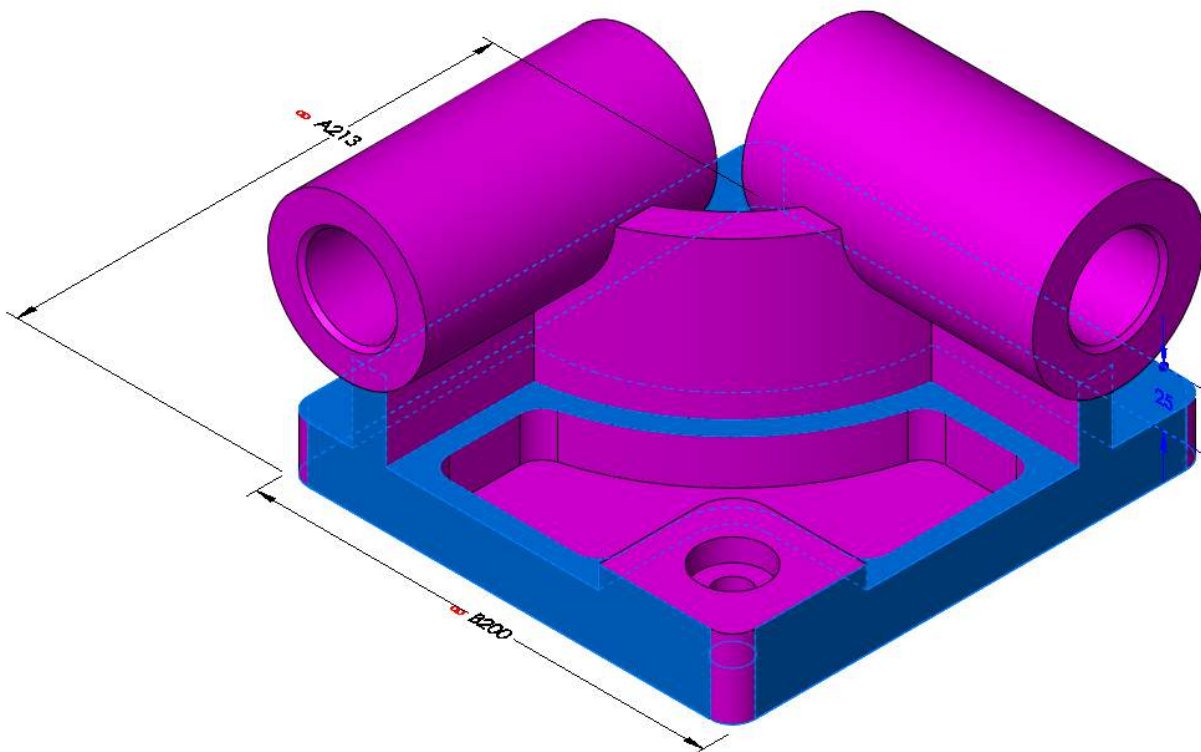
Hints and Tips

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 VARS, THE ON-LINE FORUMS OR BLOGS. NO ANSWERS WILL BE SHARED BY THE CERTIFICATION TEAM!

Hint 1: Use linked (also known as “shared values”) dimensions to manage the dimensions that are to be the same in each stage. This will ensure that the dimensions that are to be linked together in value stay linked together.

Hint 2: Change the label of the dimensions in your part to A, B, C, D, etc. to visually keep track of which dimensions need to be changed.

Hint 3: As an alternative to Hint #2, you can also use the Design Table to manage the changing parameters.



Frequently Asked Questions

Below is a series of common questions regarding SOLIDWORKS Certifications. To peruse more FAQs, please visit the SOLIDWORKS Certification FAQ page under **Home > Support > Certification > FAQ**.

1. What is the Certified SOLIDWORKS Professional (CSWP) exam?

The CSWP exam is a comprehensive, non-proctored online exam that tests an individual's ability to design and analyze parametric parts and movable assemblies using a variety of complex features in SOLIDWORKS, including design validation tools. A Certified SOLIDWORKS Professional is an individual that has successfully passed this exam.

2. What resources do I need to take the CSWP?

The CSWA/P test is an on-line test that can be taken on any computer that has SOLIDWORKS running and a connection to the Internet. **You are responsible for providing your own working copy of SOLIDWORKS. A commercial license of SOLIDWORKS or the SOLIDWORKS Student Edition will be adequate for the exams.**

The test runs in its own client window separate from SOLIDWORKS. You can either run the exam software on the same computer as your SOLIDWORKS software or in a separate computer next to the one running SOLIDWORKS. Please note that if you are taking the test on a separate computer that you have some means to transfer files from the computer running the testing client to the computer running SOLIDWORKS. Dual monitors are recommended but not required.

As stated above, an internet connection is required for the CSWA/P exams. At this point there are no provisions for a stand-alone exam.

3. What is the policy on retaking the CSWA/P?

There is a 30-day waiting period before retaking the CSWA and any Advanced CSWP exam. There is a 14-day waiting period before retaking any CSWP segment exam. Also, the user will be required to purchase another exam credit to retake the test.

4. What do I receive when I pass the exam?

You will receive certificates for each exam that you pass. You receive an email that directs you to our electronic certificate access page. There you can login and download your electronic certificate(s) and electronic business card logo(s); CSWP's also receive discounts to partner products and SOLIDWORKS World events. For more information refer to www.solidworks.com/cswp.

5. Can the exam be paused?

No. Once started, exams cannot be paused.

6. I took the exam and my Internet connection failed when the test ended. How do I report my results now?

The tester software will retry to connect for ~2 minutes. If the connection is still not available, an error message will be displayed and a TXT file will be saved on your desktop. The name of the file is: Tangix_TesterPro_Error_Date_Time.

Please send this file to support@tangix.com

7. Will my answers be lost if my computer crashes? Will I lose my testing credit/have to pay again if my computer crashes?

You will have to start the examination over and no refund will be available. Once you click 'take exam' your exam credit will be redeemed and we cannot refund your payment or voucher. If your computer crashes, your answers are not recoverable.

8. Which commercial version of the software should I use to take the CSWP exams?

For all exams, the minimum version necessary is listed on the information page of that exam. Please go to <http://www.solidworks.com/certification> and click on the individual exam information page links on the left.

9. Will a certificate be mailed out to me once I pass an exam?

SOLIDWORKS no longer mails out certificates to individuals who have passed an exam. We have made it a simple download that you can print from your computer so you no longer have to wait to receive it. To print your certificate, simply visit www.virtualtester.com/solidworks/user.php. On that page, simply click

the "Print My Certificate" button and follow the on-screen instructions. Please note that not all exams have printable certificates.

Helpful Sites

SOLIDWORKS Home:

www.SOLIDWORKS.com

SOLIDWORKS Resource Center:

<http://www.SOLIDWORKS.com/sw/resources.htm>

SOLIDWORKS YouTube Channel:

<https://www.youtube.com/user/SOLIDWORKS>

MySOLIDWORKS:

my.SOLIDWORKS.com

Training Pages:

<http://www.SOLIDWORKS.com/sw/support/software-training-certification.htm>