SolidWorks Corporation: CSWP-SURF Advanced Surfacing Certification Sample Exam

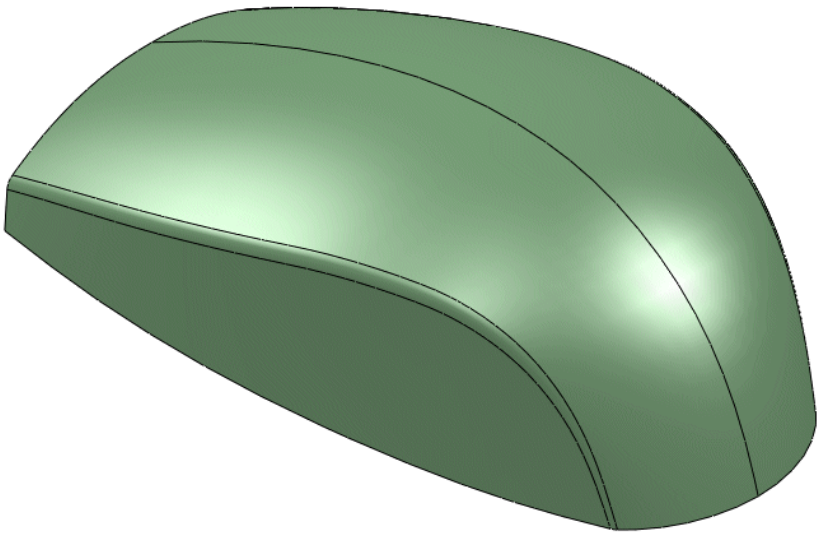
Certified SolidWorks Professional: Advanced Surfacing Certification (CSWP-SURF)

Sample Exam

These questions are similar to the problem sets found in the CSWP-SURF exam.

Note: You must use at least SolidWorks 2008 sp3.1 for this exam. Any use of a previous version will result in the inability to open some of the testing files.

Problem Description: A new computer mouse is being developed. A colleague from another company has developed the top-right mouse surface using another 3D CAD system. Also supplied is a sketch picture that contains the "footprint" of the mouse. You will have to open the part that contains the imported surface and sketch picture and create a side surface, fillet, and other operations to complete the mouse per the instructions given.



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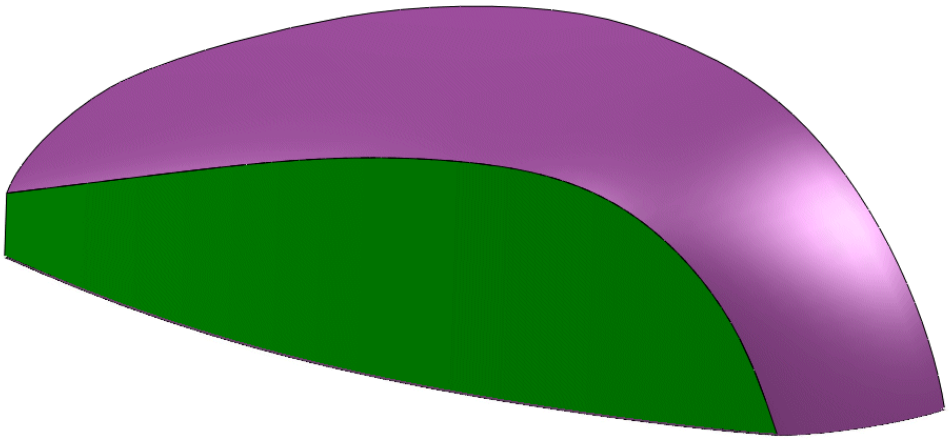
Design this part in SolidWorks using Surfacing features
Unit system: MMGS (millimeter, gram, second)
Decimal places: 2
Part origin: Arbitrary
Material = None

Question 1:

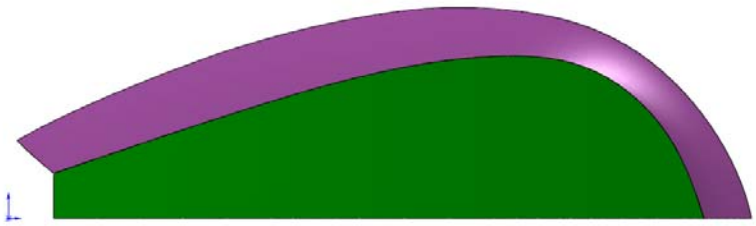
-Open the attached SolidWorks part (Imported_surface_and_sketch_picture.SLDPRT). It contains a surface imported from another CAD system and a Sketch Picture in Sketch123.

-Create a surface on the side using either Swept Surface or Surface Fill.

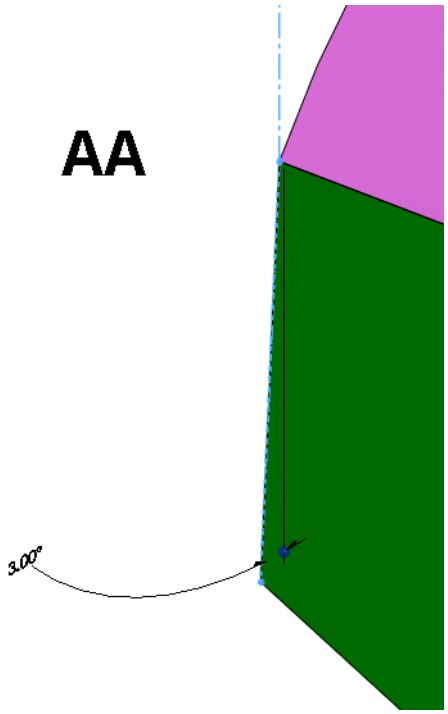


The surface should follow these rules:

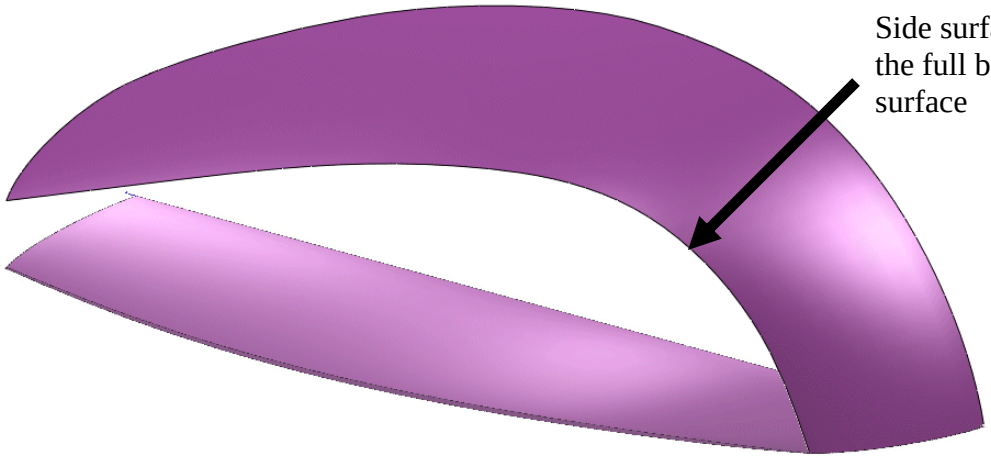
-This surface should be flush with the XZ plane (Top plane).



-The surface should start with a profile parallel to the YZ plane (see Detail View AA) that is angled 3 degrees from the vertical along the full boundary of the imported surface (see image).



-The shape of the side surface should follow the contour of the "footprint" in the Sketch Picture (found in Sketch123).

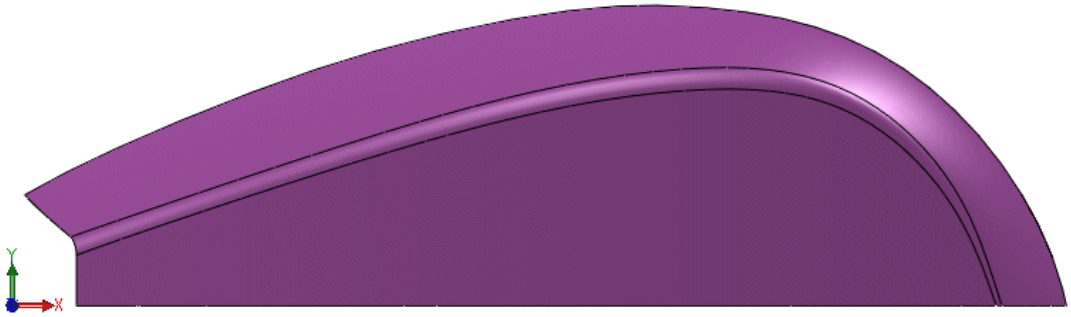


-After creating the surface, measure its surface area.

What is the surface area of the side surface (mm^2)?

Question 2:

Create a curvature continuous fillet surface connecting the top and side surfaces
Fillet radius = 3 mm



-Create a 3 mm fillet that travels the full length between the top and side surfaces.

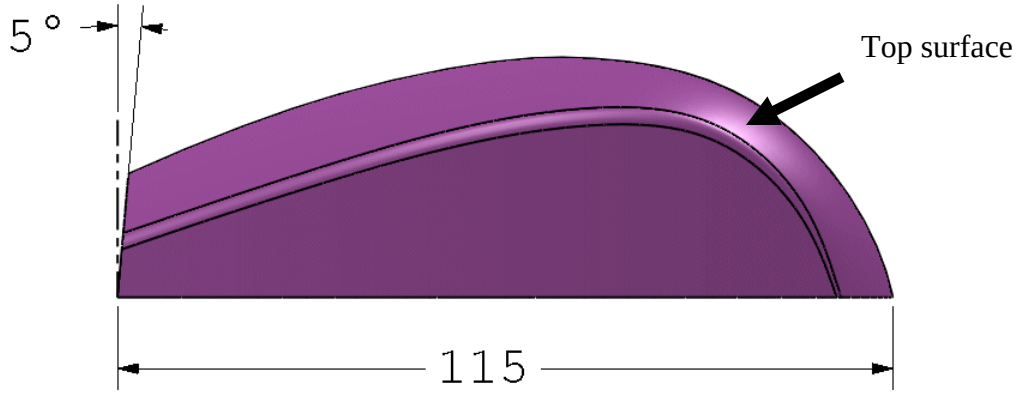
What is the surface area of the fillet (in mm^2)? (within +/- 10 mm^2)

A) 322.50
B) 348.10
C) 374.10
D) 399.30

Question 3:

Trim surfaces at the end of the mouse

-Trim the surfaces at the end of the mouse at an angle of 5 degrees while keeping the length of the mouse as shown in the image.



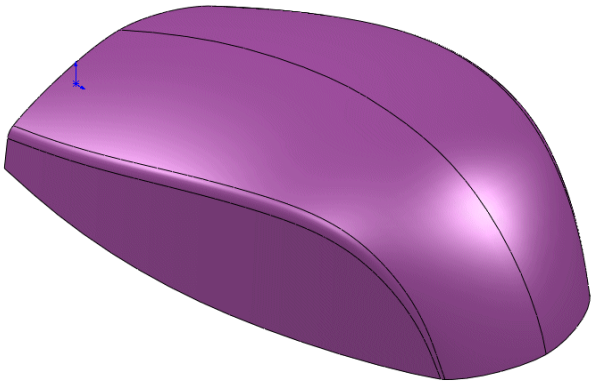
-Measure the top surface.

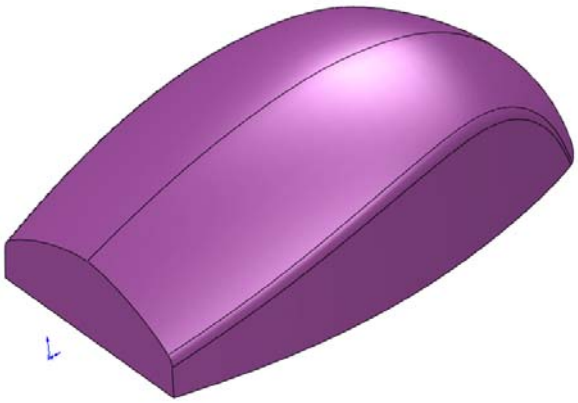
What is the surface area of the top surface (mm^2)?

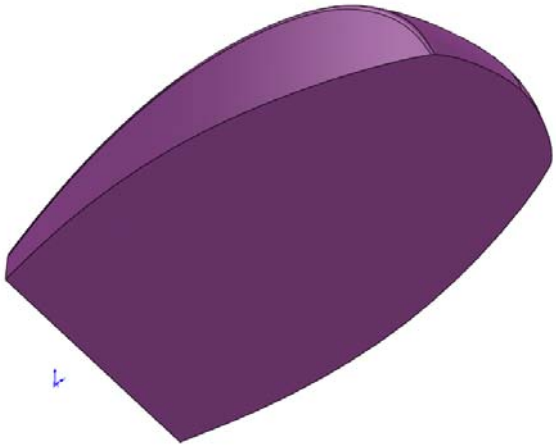
Question 4:

Material = ABS (Density = 0.00102 g/mm^3)

-Mirror the existing surfaces and complete the steps to create the solid of the completed part







-Apply the material ABS to the solid.

What is the mass of the resulting solid (grams)?

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ANSWERS

1. **2220.93 mm^2 +/- 7 mm^2**
2. **B**
3. **3723.81 mm^2 +/- 40 mm^2**
4. **176.87 grams +/- 3.5 grams**

ADVICE

You should be able to answer all four questions correctly within 20 to 30 minutes

Read through every question first. This will help you save time and make correct decisions when choosing how to proceed.