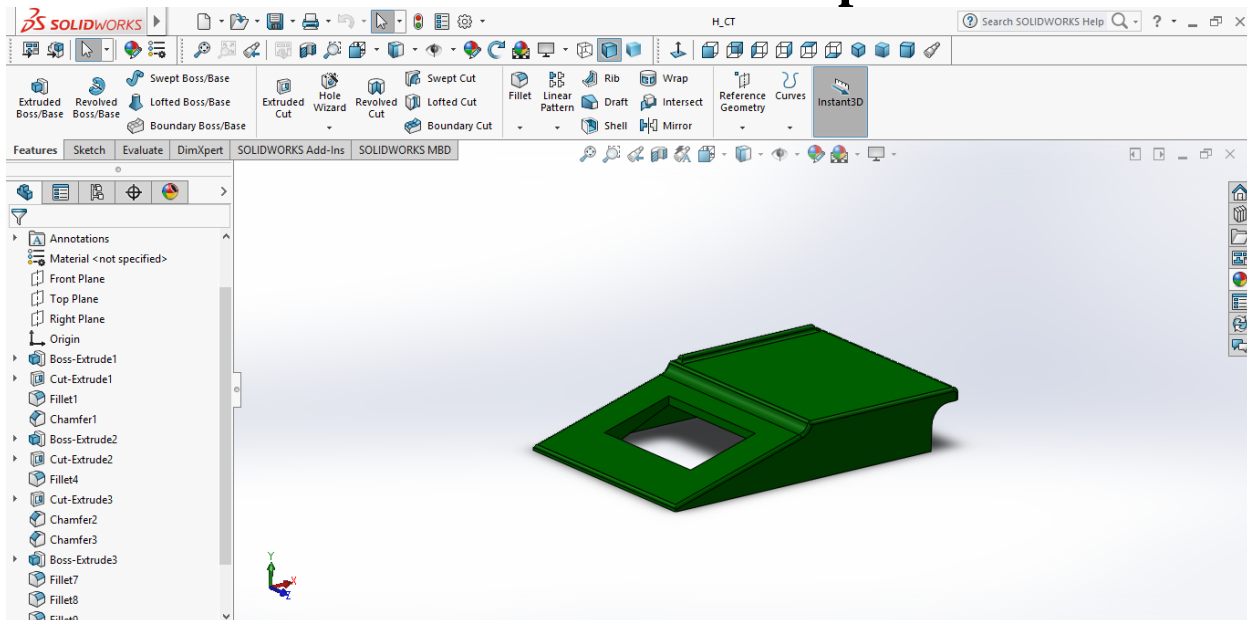


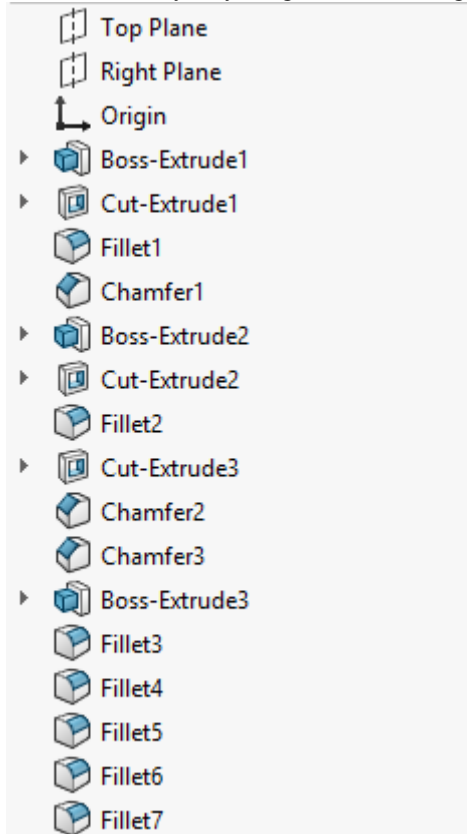
# *Feller-Buncher SolidWorks/3D Printing Project*

## **Part 1: The Cab Top**



**The Boolean Process:** Using basic geometric shapes to create complex parts. (See steps below.)

\*There are many ways to go about creating any part in SolidWorks this is one method of creating the Cab Top.



**Begin by choosing the Top plane as the reference.**

**Boss-Extrude1:** The Cab Top is started by creating a simple 48\*33\*9mm rectangular prism.

**Cut-Extrude1:** Cut out a 25\*33\*1.75mm rectangular prism from the left side of the initial rectangular prism.

**Fillet1:** Curve the inner lower edge of difference made with a radius of 2mm.

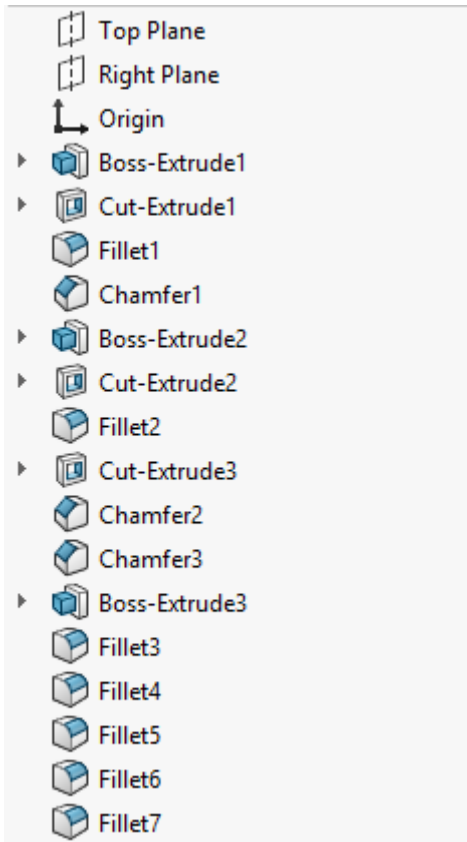
**Chamfer1:** Cut out a triangle using the outer upper edge of the difference made at angle 75degrees and a length of 6.5mm.

**Boss-Extrude2:** Add a 25\*1\*1mm rectangular on the top surface. Have it be 1mm from either edge of the corner and extrude 3mm of the surface it sits on.

**Cut-Extrude2:** Using the top surface as a reference cut out a 12\*20 rectangular prism through all. Being centered in width and 8mm from the left side edge. This will be the sunroof.

**Fillet2:** Curve all the edges around the Chamfer1 with radius 0.5mm.

**Cut-Extrude3:** Cut out a 2mm shell, up to the edge of the window, 5mm into the bottom of the part.



**Chamfer2:** Underneath the part cut out the triangle to the left of the window using the outmost edge and at an angle 67.25degrees at a length of 5mm. Check the “Flip Direction box”.

**Chamfer3:** Copy what you did for Chamfer2 but for the right side of the window.

**Boss-Extrude3:** From the back surface extrude a 2\*33\*5mm rectangular prism from the upper edge of the face directly underneath Boss-Extrude2.

**Fillet3:** Curve the top edge of Boss-Extrude3 with radius 1mm.

**Fillet4:** Curve the top faces top and bottom edge as well as the Outer side edges of Boss-Extrude3 with radius of 0.5mm.

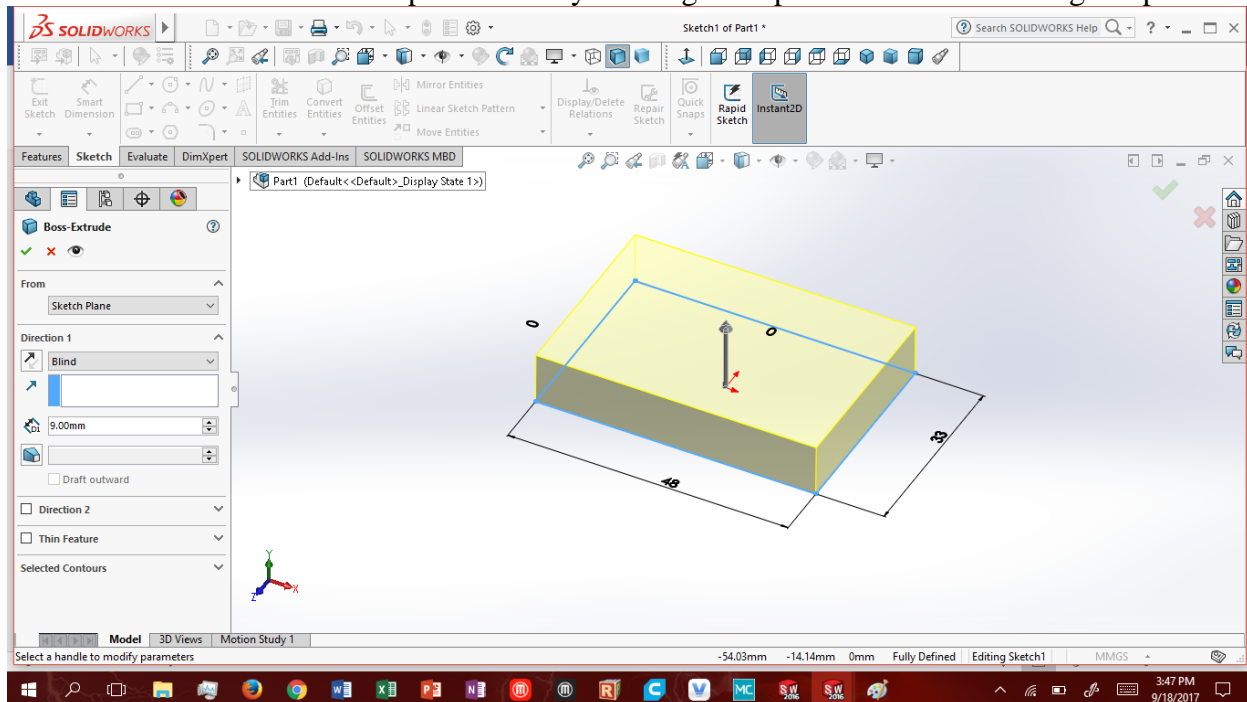
**Fillet5:** Curve the top face edges of Boss-Extrude2 with radius of 0.5mm.

**Fillet6:** Curve the bottom edges of Boss-Extrude2 with radius of 0.5mm.

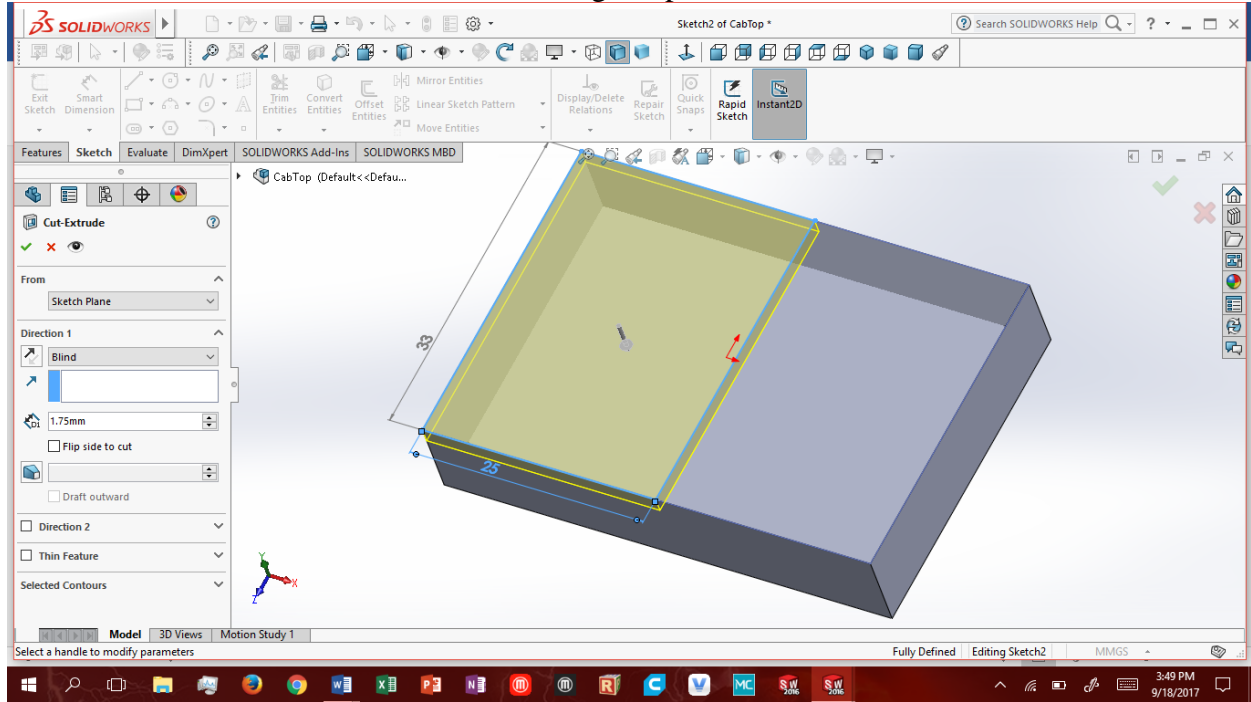
**Fillet7:** Curve the lower edge of Boss-Extrude3 that connects to Boss-Extrude1 with radius of 3mm.

**Congrats! You’ve completed the Cab Top!**

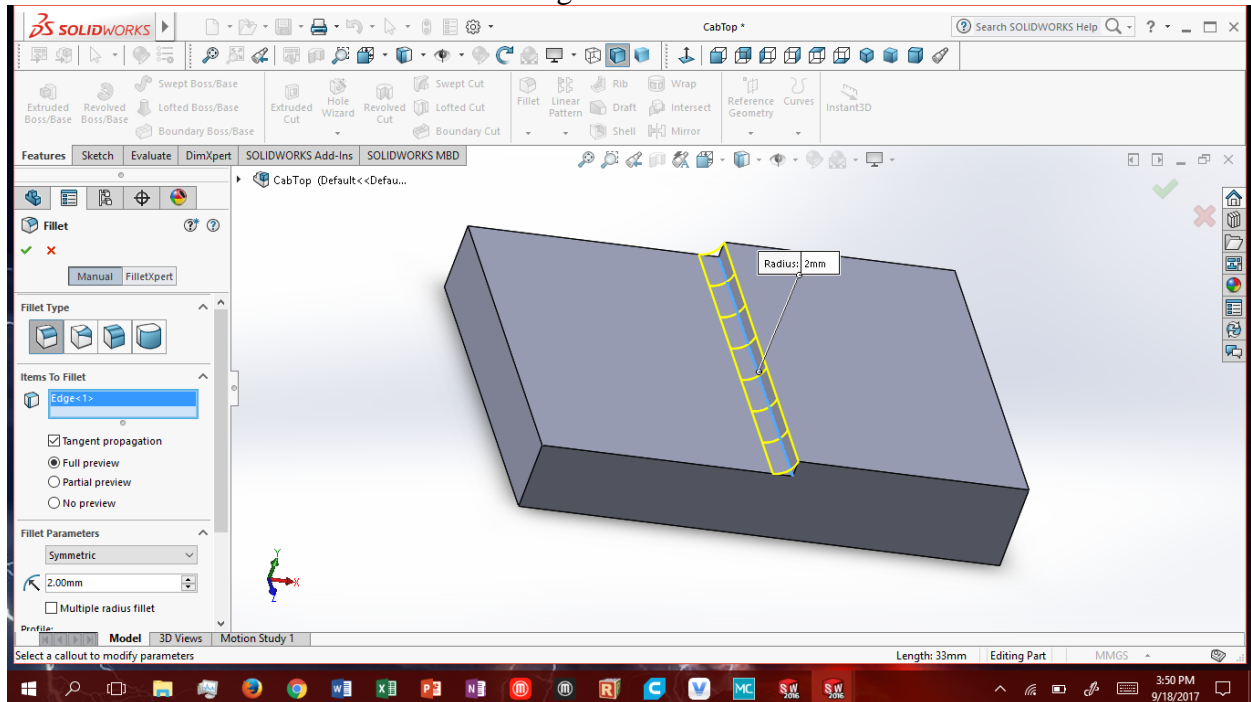
**Boss-Extrude1:** The Cab Top is started by creating a simple 48\*33\*9mm rectangular prism.



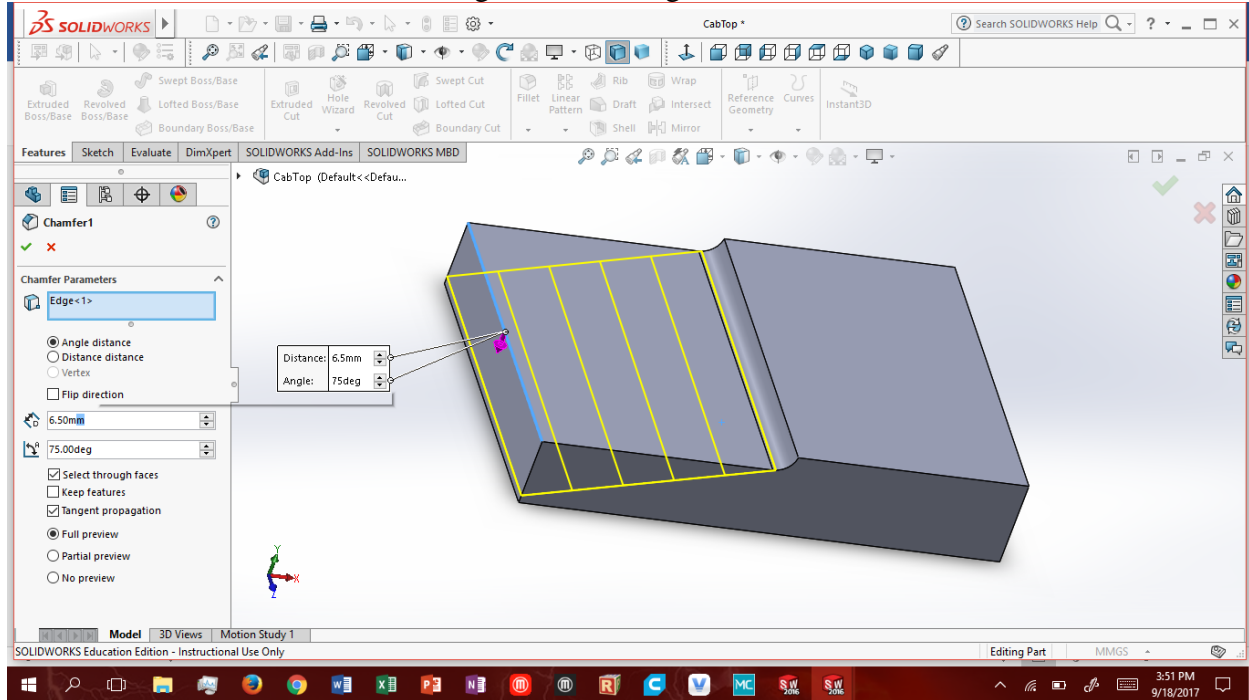
**Cut-Extrude1:** Cut out a 25\*33\*1.75mm rectangular prism from the left side of the initial rectangular prism.



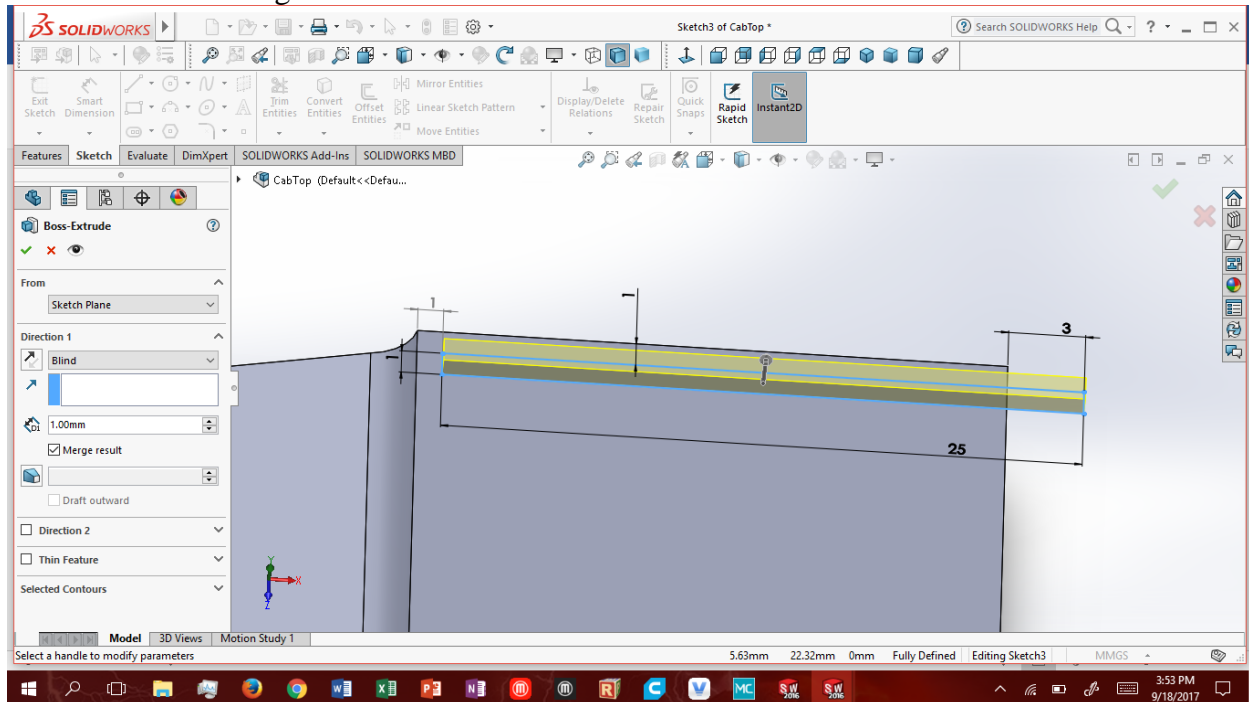
**Fillet1:** Curve the inner lower edge of difference made with a radius of 2mm.



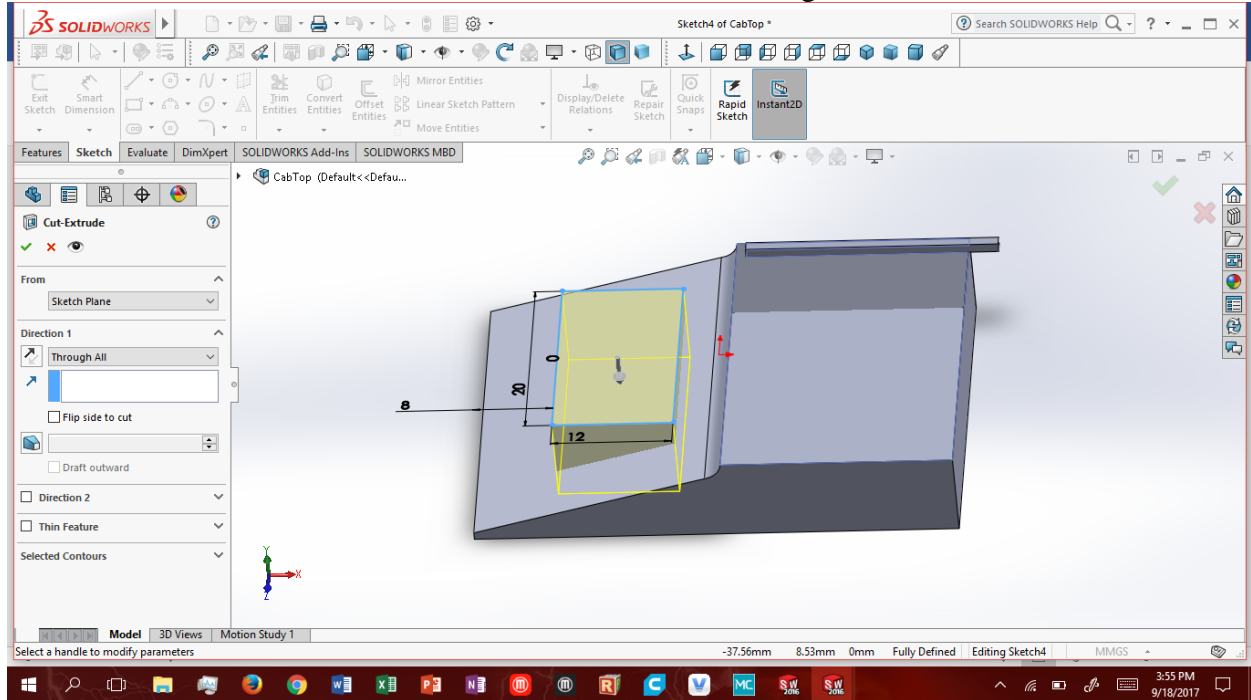
**Chamfer1:** Cut out a triangle using the outer upper edge of the difference made at angle 75degrees and a length of 6.5mm.



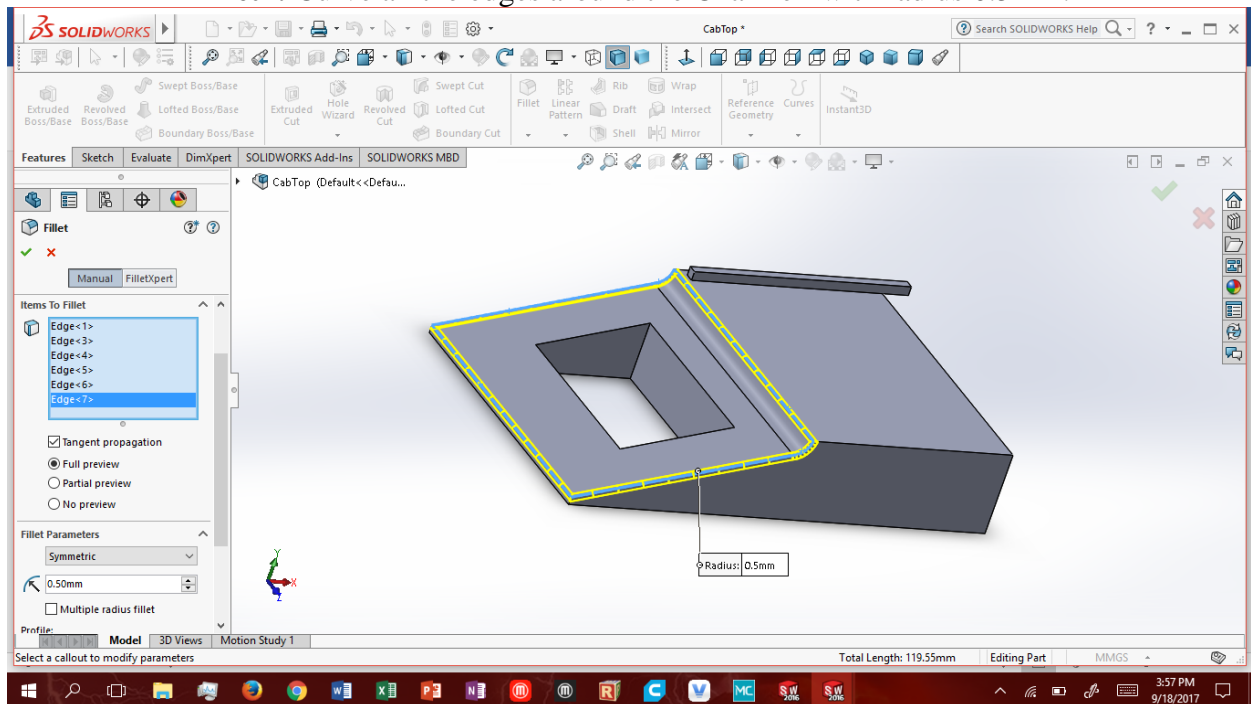
**Boss-Extrude2:** Add a 25\*1\*1mm rectangular on the top surface. Have it be 1mm from either edge of the corner and extrude 3mm of the surface it sits on.



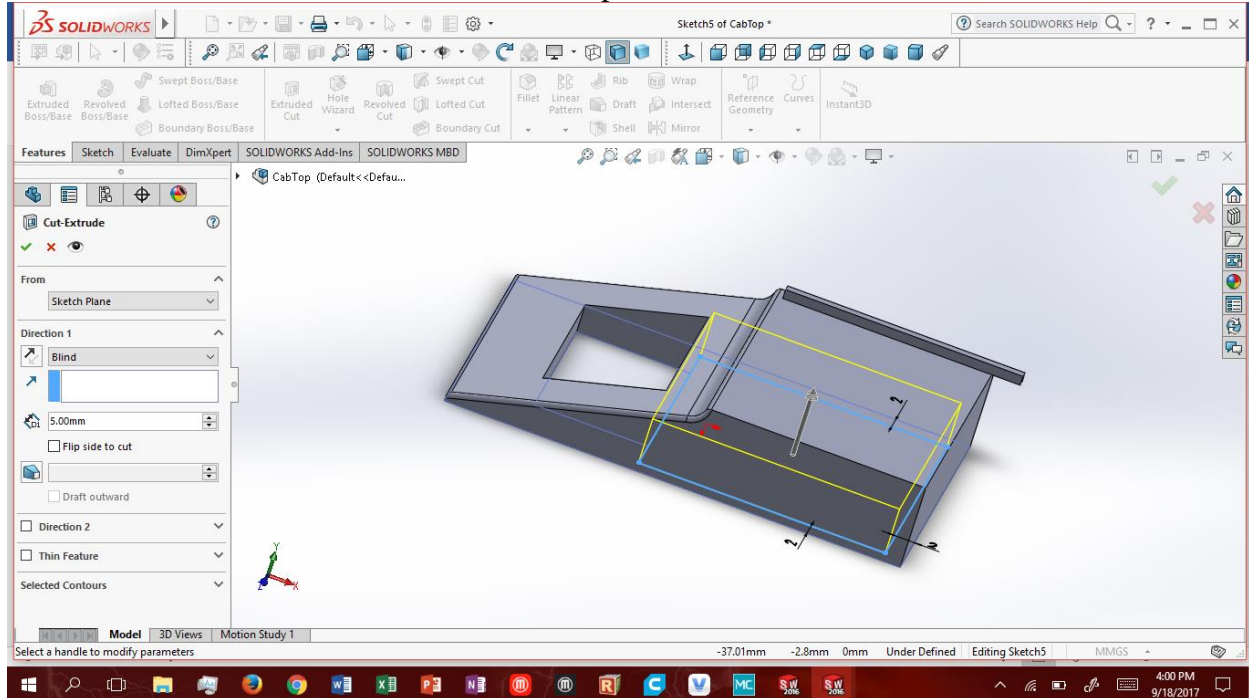
**Cut-Extrude2:** Using the top surface as a reference cut out a 12\*20 rectangular prism through all. Center this in width and 8mm from the left side edge. This will be the sunroof.



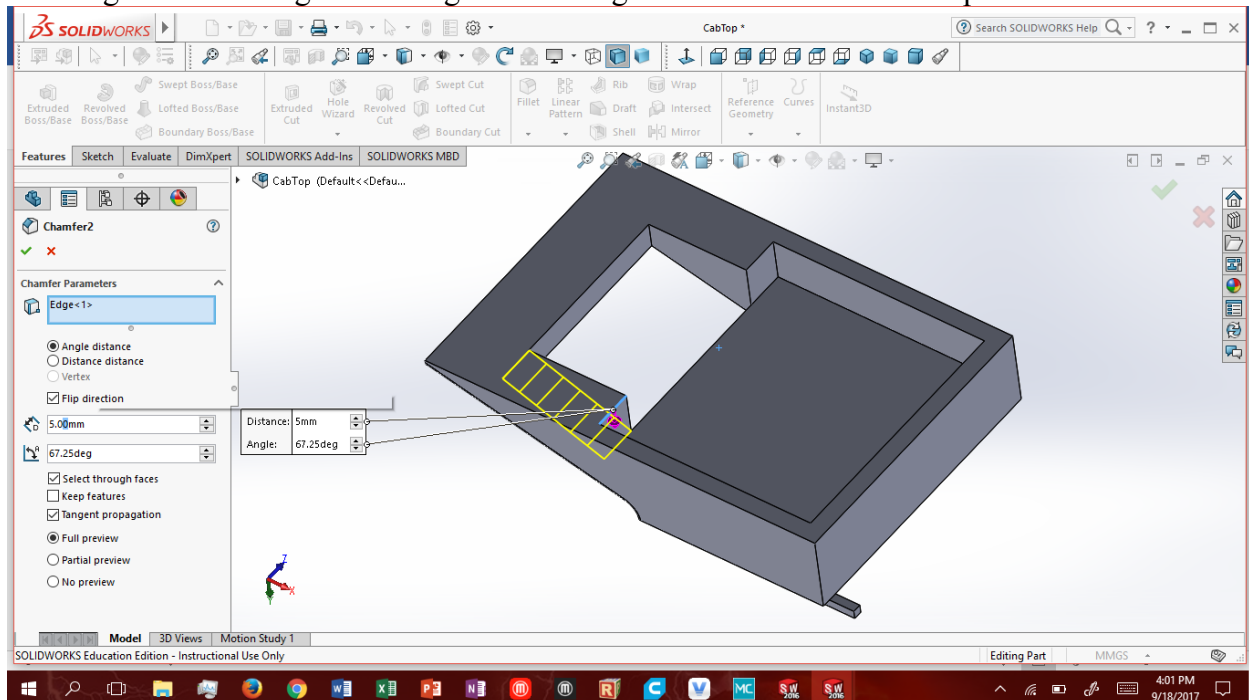
**Fillet2:** Curve all the edges around the Chamfer1 with radius 0.5mm.



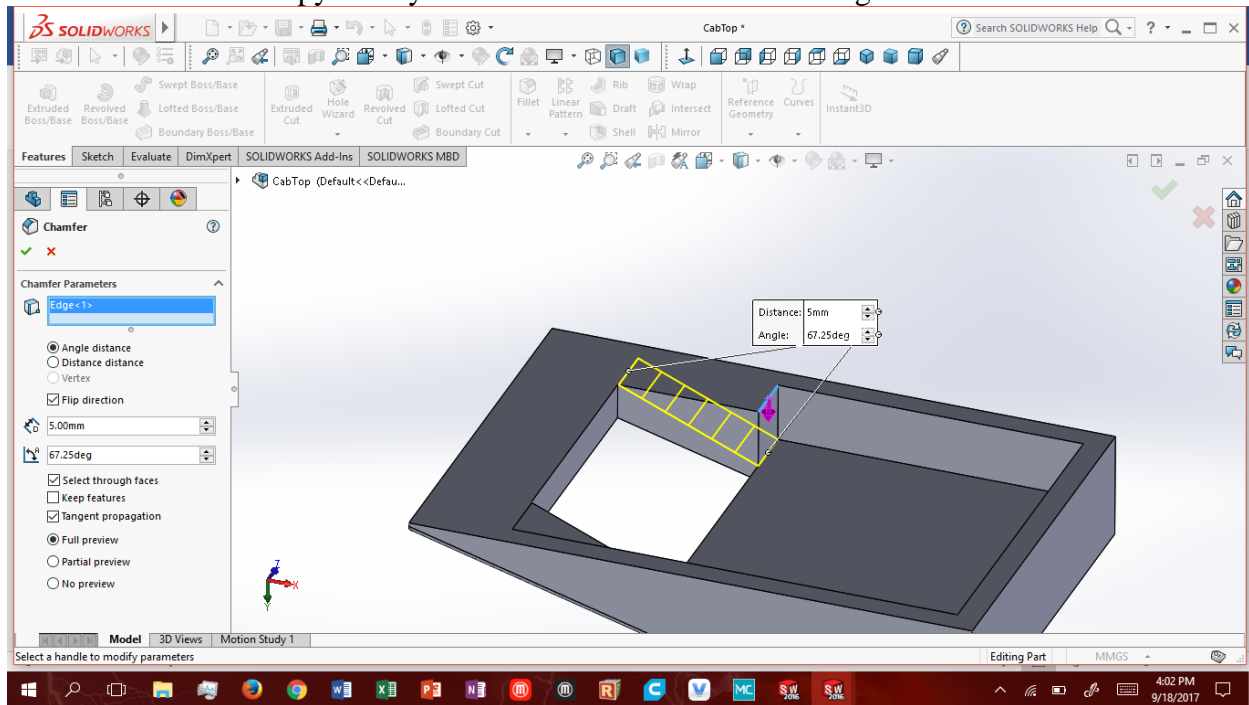
**Cut-Extrude3:** Cut out a 2mm shell, up to the edge of the window, 5mm into the bottom of the part.



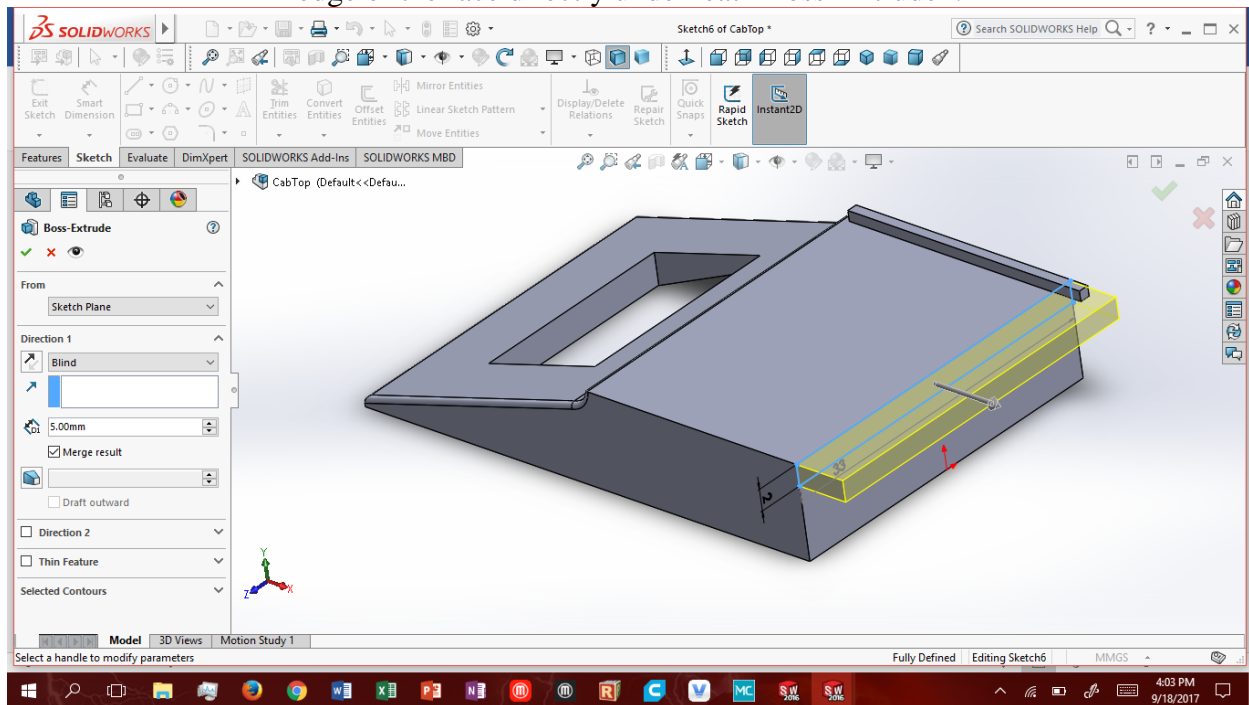
**Chamfer2:** Underneath the part cut out the triangle to the left of the window using the outmost edge and at an angle 67.25degrees at a length of 5mm. Check the “Flip Direction box”.



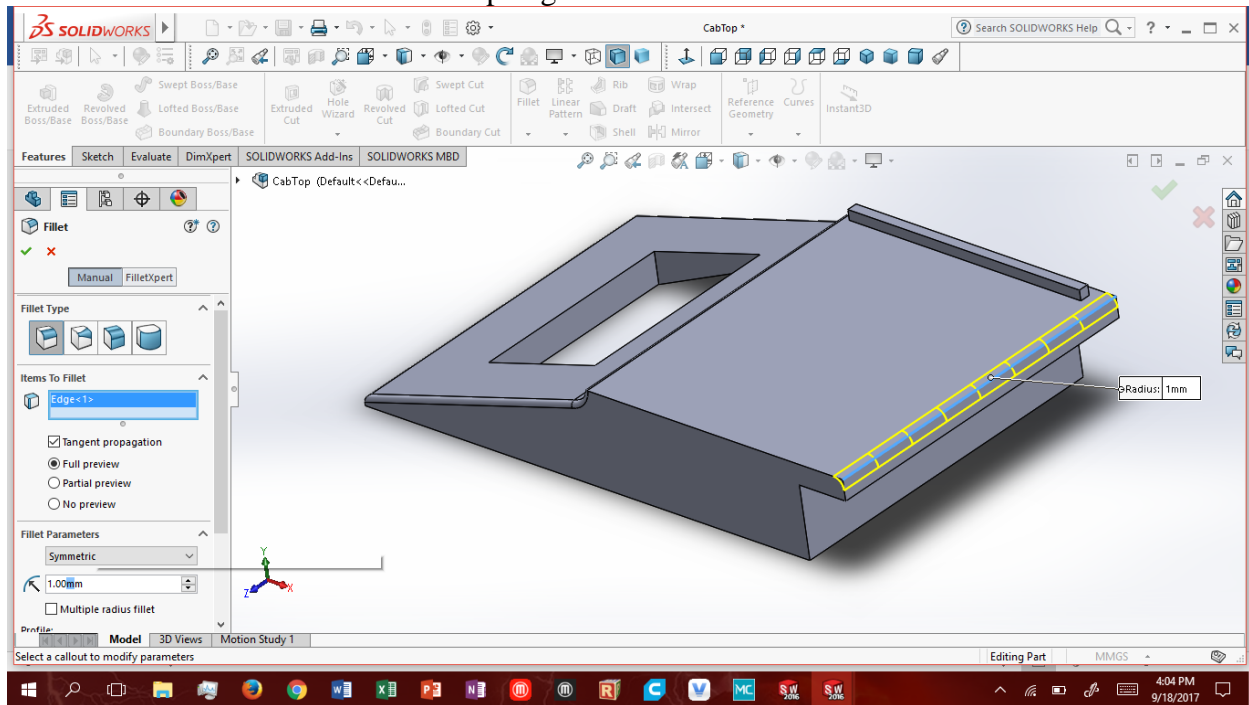
**Chamfer3:** Copy what you did for Chamfer2 but for the right side of the window.



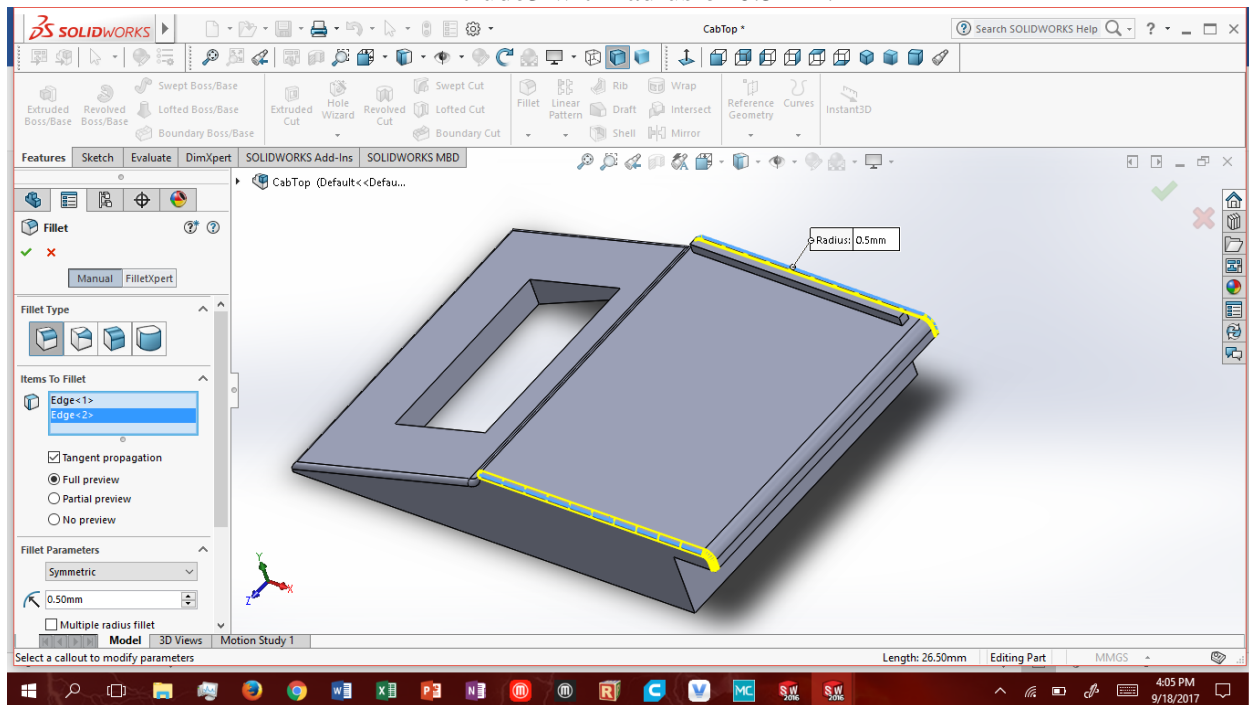
**Boss-Extrude3:** From the back surface extrude a 2\*33\*5mm rectangular prism from the upper edge of the face directly underneath Boss-Extrude2.



**Fillet3:** Curve the top edge of Boss-Extrude3 with radius 1mm.

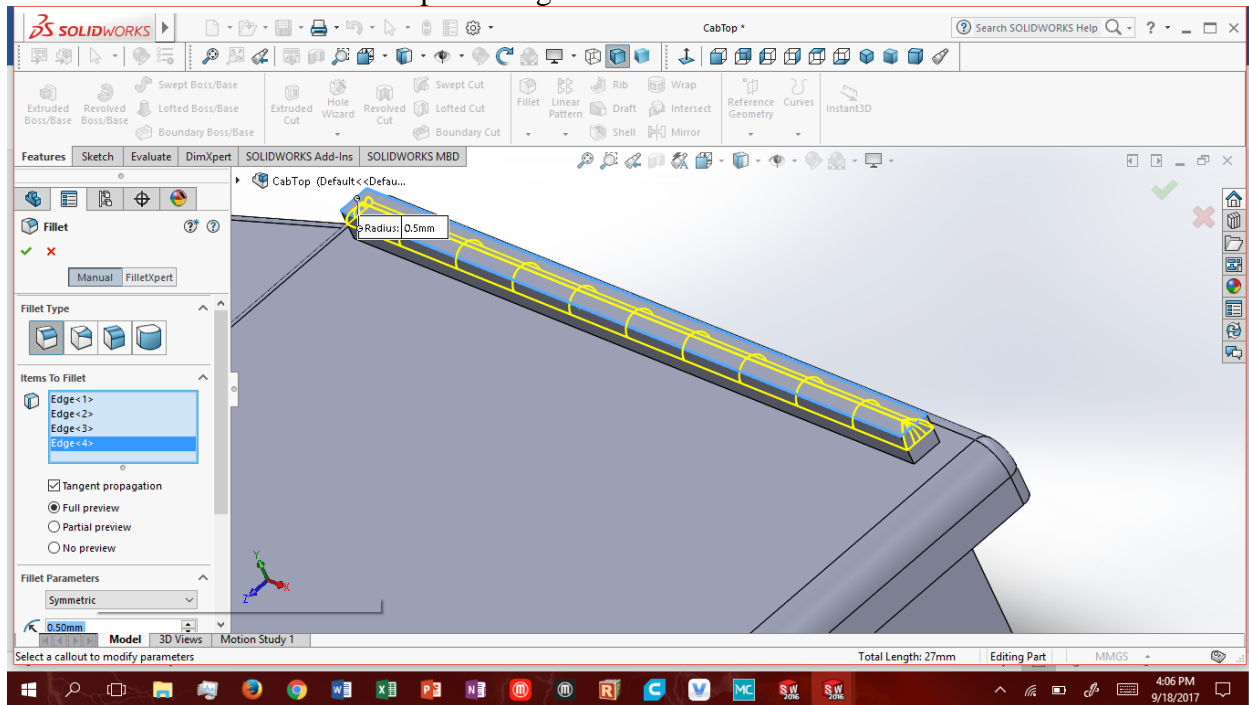


**Fillet4:** Curve the top faces top and bottom edge as well as the Outer side edges of Boss-Extrude3 with radius of 0.5mm.

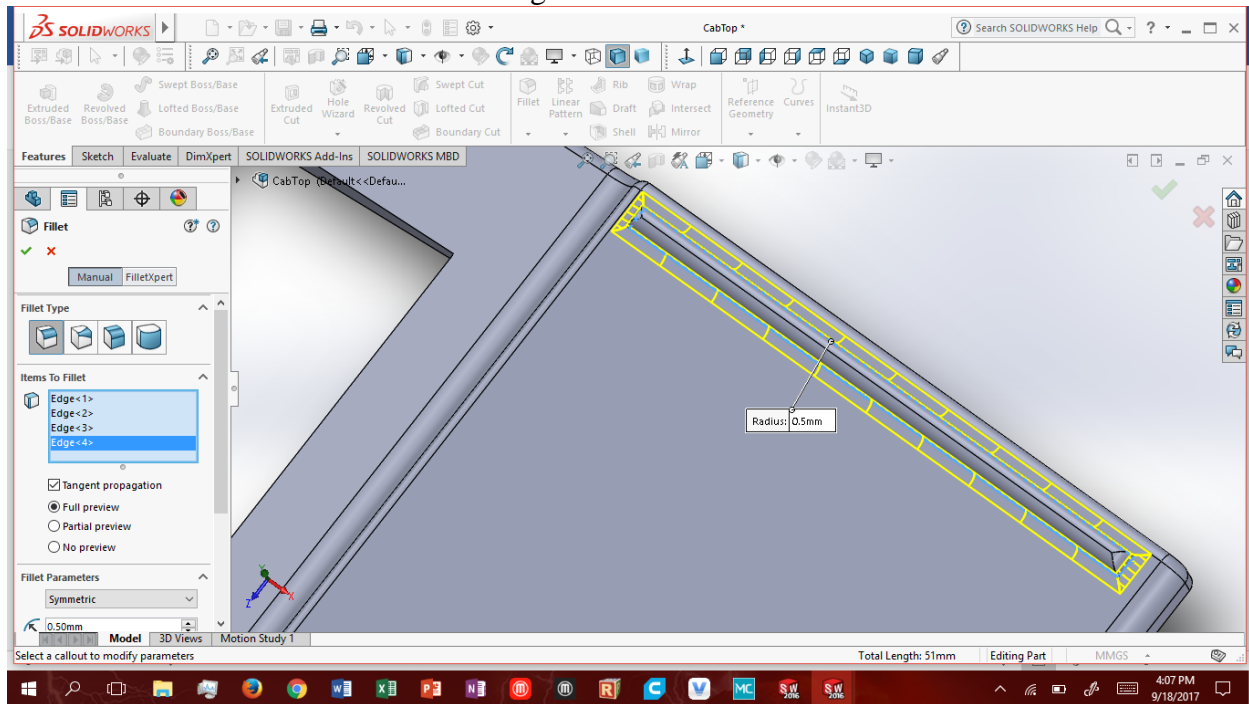




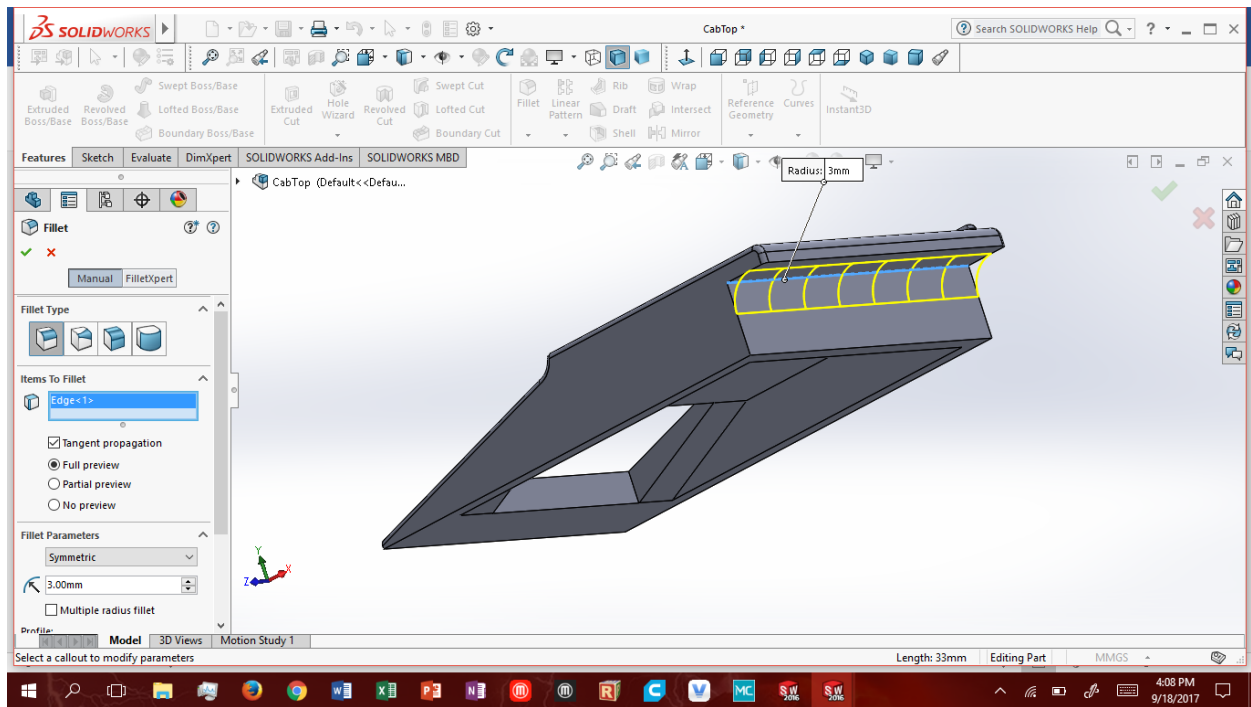
**Fillet5:** Curve the top face edges of Boss-Extrude2 with radius of 0.5mm.



**Fillet6:** Curve the bottom edges of Boss-Extrude2 with radius of 0.5mm.



**Fillet7:** Curve the lower edge of Boss-Extrude3 that connects to Boss-Extrude1 with radius of



*Congrats! You've completed the Cab Top!*

