



# Rocket 1 Fin

## A. Sketch.

Step 1. Click File Menu > New, click **Part** and OK.

Step 2. Click **Right Plane**  in the Feature Manager and click **Sketch**  on the context toolbar, **Fig. 1**.

Step 3. Click **Line**  (L) on the Sketch toolbar.

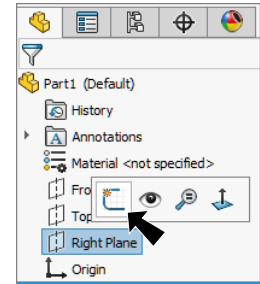



Fig. 1

Step 4. Starting at the Origin  sketch lines in **Fig. 2**. Use the inferencing line, the dotted line that appears when you sketch the lines to **keep bottom line horizontal and right side line vertical**. Do not add any extra lines.

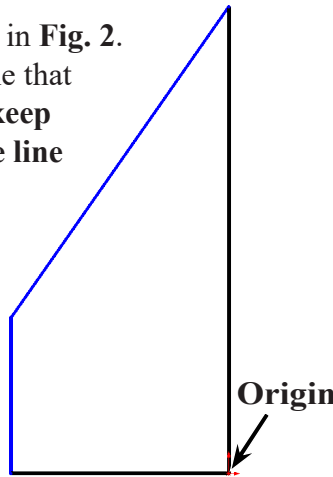


Fig. 2

Step 5. Click **Smart Dimension** (S) on the Sketch toolbar.



Step 6. Add dimensions, **Fig. 3**.

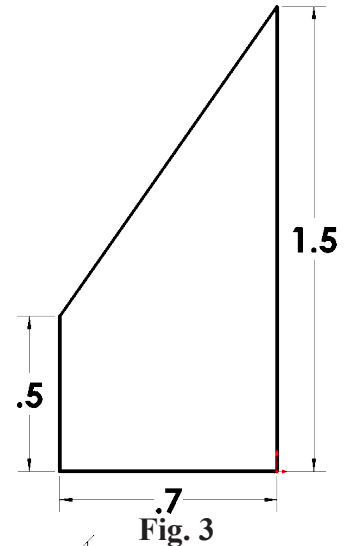




Fig. 3

## B. Extrude.

Step 1. Click **Features**  on the Command Manager toolbar.

Step 2. Click **Extruded Boss/Base**  on the Features toolbar.

Step 3. In the Boss-Extrude Property Manager set:  
 under Direction 1, **Fig. 4**  
 End Condition **Mid Plane**  
 Depth  **.06**  
 click OK .

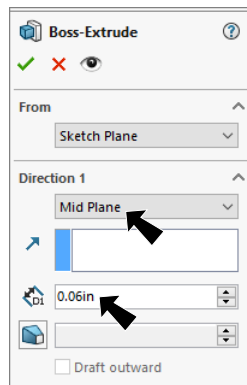


Fig. 4

## C. Save as "FIN".

Step 1. Click File Menu > Save As.

Step 2. Key-in **FIN** for filename and press ENTER.

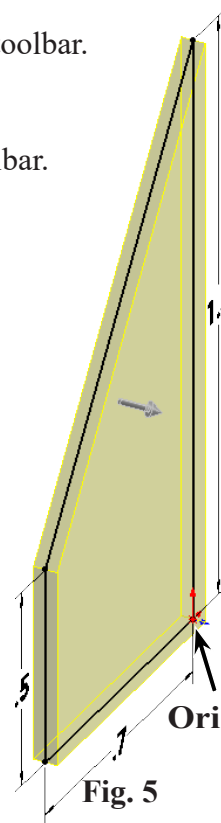


Fig. 5

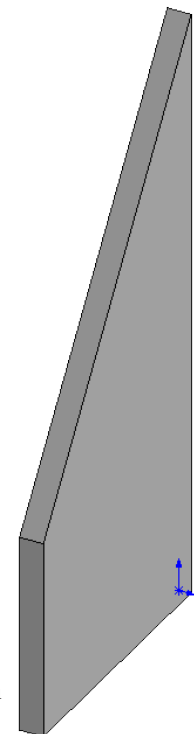


Fig. 6

## D. Cut.



Step 1. Click **Bottom**  on the Standard Views toolbar. (**Ctrl-6**).


Step 2. Click **bottom face of fin** and click **Sketch**  on the context toolbar, **Fig. 7**.

Step 3. Click **Circle**  (S) on the Sketch toolbar.

Step 4. Sketch small **circle** below the fin, **Fig. 8**.

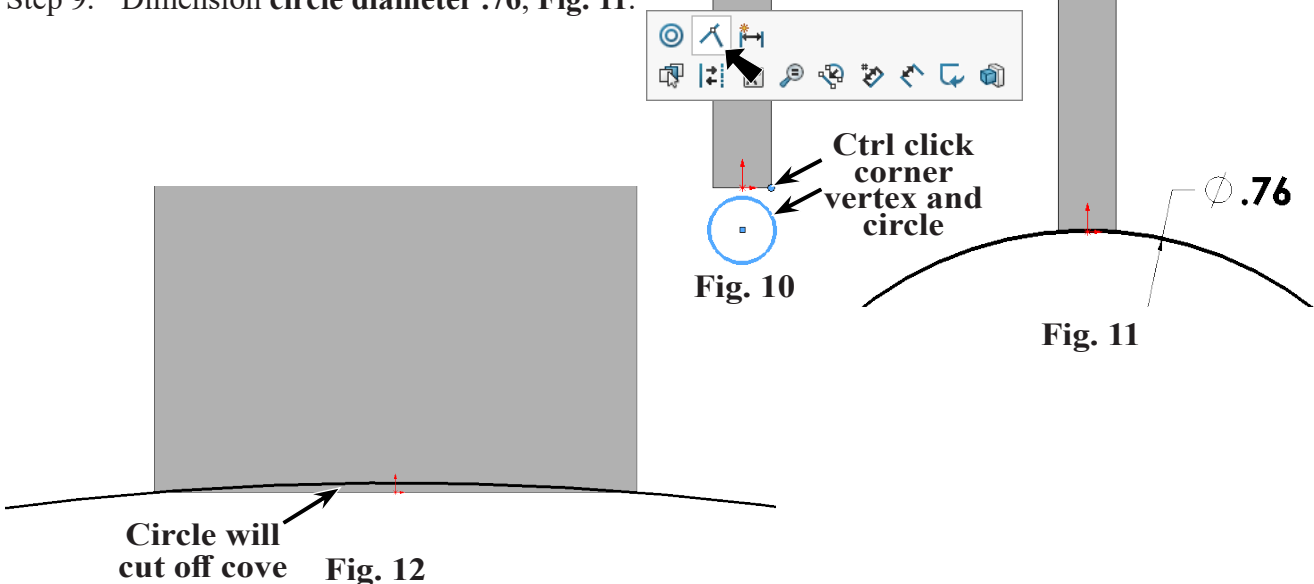
Step 5. **Right click sketch** and click **Select** from menu to unselect Circle tool.

Step 6. **Ctrl click center of circle and Origin**  to select both. Release Ctrl key and click **Make Vertical**  on the context toolbar, **Fig. 9**.

Step 7. **Ctrl click corner vertex of fin and circle** to select both. Release Ctrl key and click **Make Coincident**  on the context toolbar, **Fig. 10**.

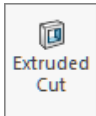
Step 8. Click **Smart Dimension**  (S) on the Sketch toolbar.


Step 9. Dimension **circle diameter .76**, **Fig. 11**.



Step 10. Click **Trimetric**  on the Standard Views toolbar.

Step 11. Click **Features**  on the Command Manager toolbar.

Step 12. Click **Extruded Cut**  on the Features toolbar.

Step 13. In the Cut Extrude Property Manager set:  
under Direction 1, **Fig. 13**  
End Condition **Through All**  
click OK .

Step 14. Save. Use **Ctrl-S**.

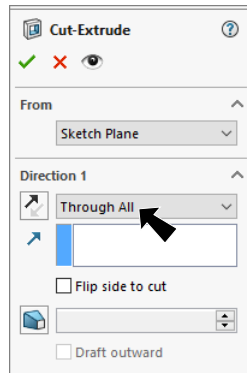


Fig. 13

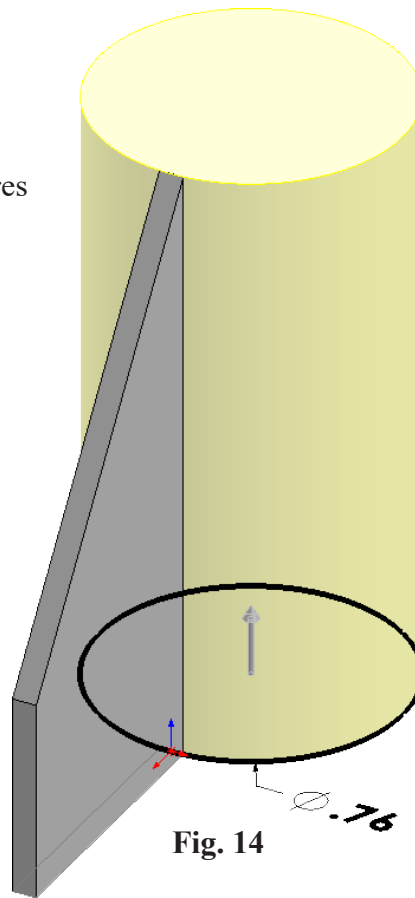


Fig. 14

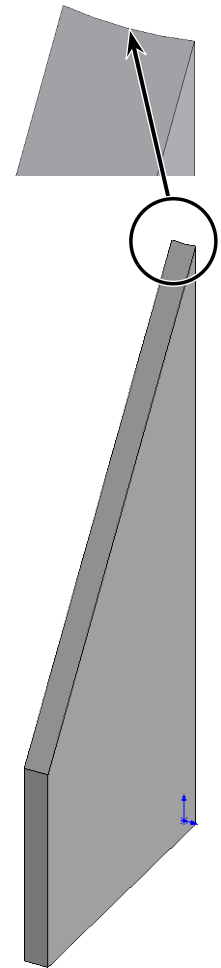



Fig. 15

## E. Image Quality.

Step 1. **Tip:** You can crank up the image quality resolution setting resulting in more accurate curves but slower model rebuilding. Click **Options**  on the Standard toolbar. Select **Document Properties** tab and **Image Quality**. Then, drag out slider, Fig. 16.

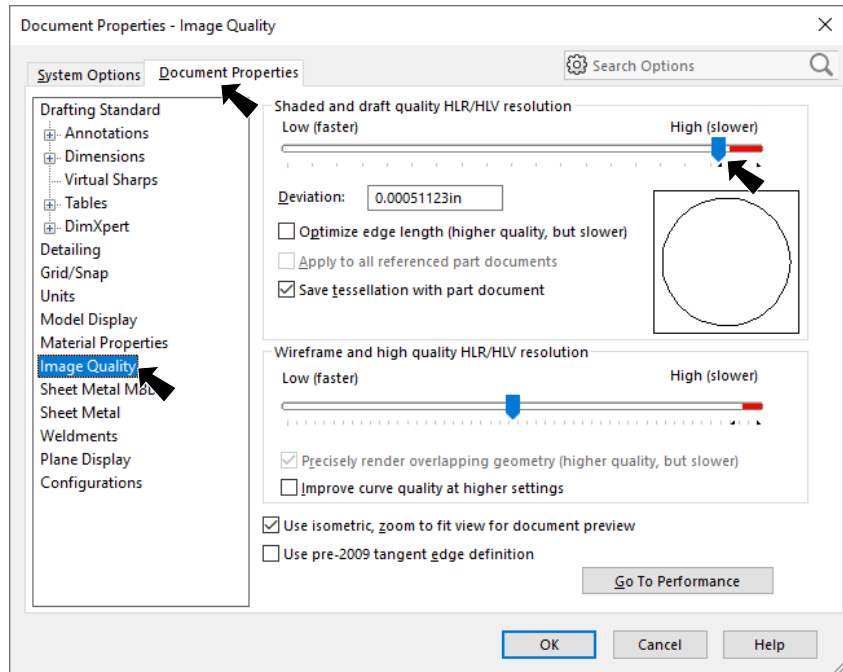


Fig. 16

## F. Fillet Leading Edge.


Step 2. Click **Fillet**  on the Features toolbar.

Step 3. In the Fillet Property Manager, select **Manual**, **Fig. 17** under Fillet Type

select **Full Round Fillet** 

click in **Face Set 1**  box  
click **right side face**, **Fig. 18**

**Tip:** before moving cursor, right click to move selection to next selection box

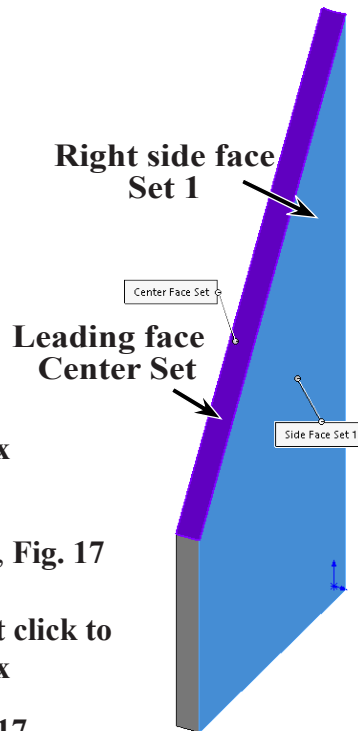
click in **Center Face Set**  box, **Fig. 17**  
click **leading face**, **Fig. 18**  
**again - before moving cursor, right click to move selection to next selection box**

click in **Face Set 2**  box, **Fig. 17**  
use **right arrow key** to rotate **view** to view **right face**, **Fig. 19**

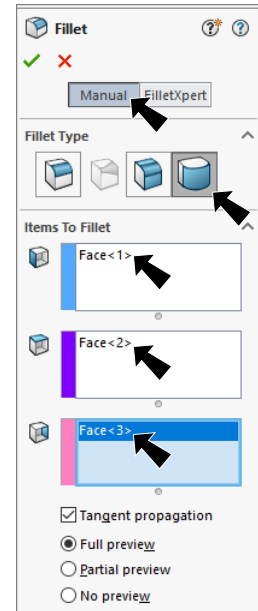
click **left side face**, **Fig. 19**

click **OK** .

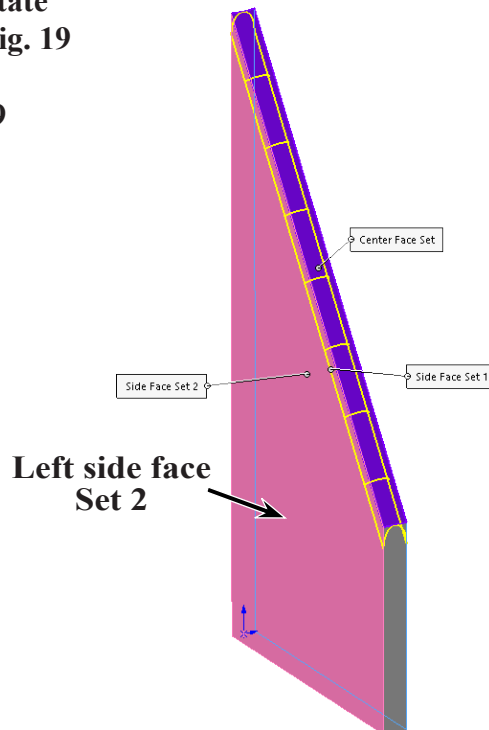
Step 3. Save. Use **Ctrl-S**.



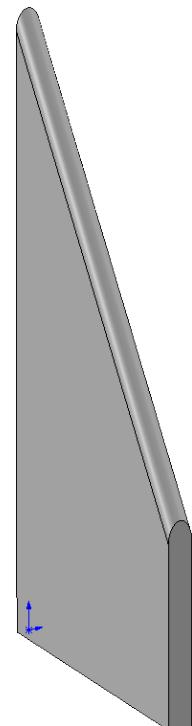
**Fig. 18**



**Fig. 17**




**Fig. 19**



**Fig. 20**


**Tip:** We have 3 options to display the appearance.

1. If your graphics card is RealView compatible, use RealView  on the Standard Views toolbar.
2. Use Preview Window in Render Tools.
3. Use Integrated Preview with Render Region.

Here we will use **Render Region** with **Integrated Preview**.

## G. Enable Render Tools Toolbar.

Step 1. Click **Trimetric**  on the Standard Views toolbar.

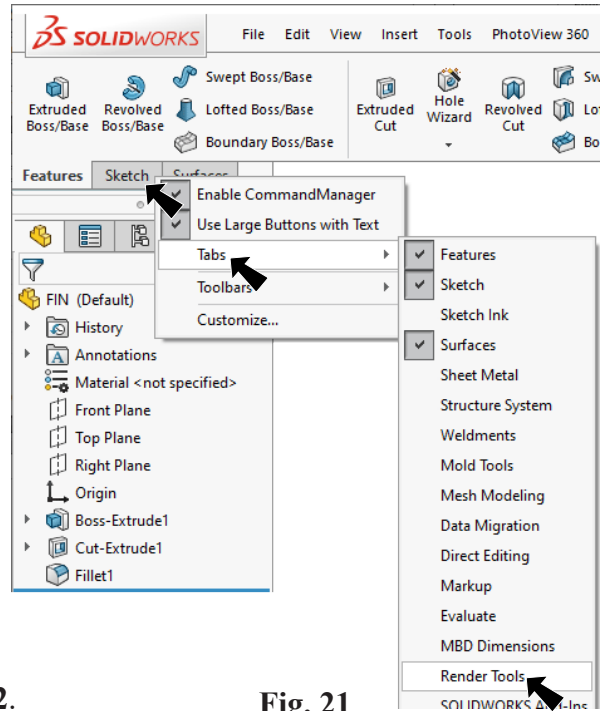
Step 2. To enable Render Tools toolbar, **right click Sketch**  on the Command Manager toolbar and select **Tabs > Render Tools**, **Fig. 21**.

Step 3. Click **Render Tools**  on the Command Manager toolbar.

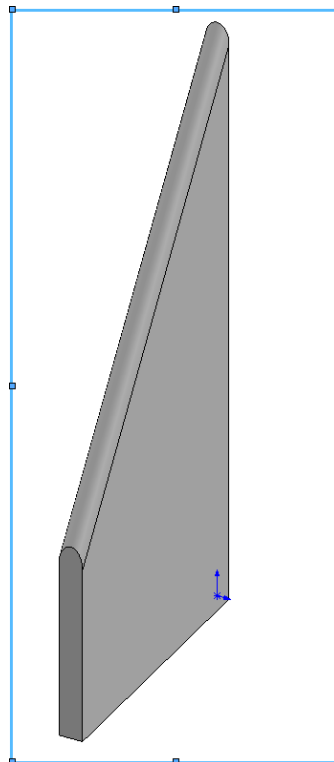
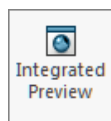
Step 4. Click **Render Region**  on the Render Tools toolbar.

Step 5. Adjust render region to fit around Fin, **Fig. 22**.

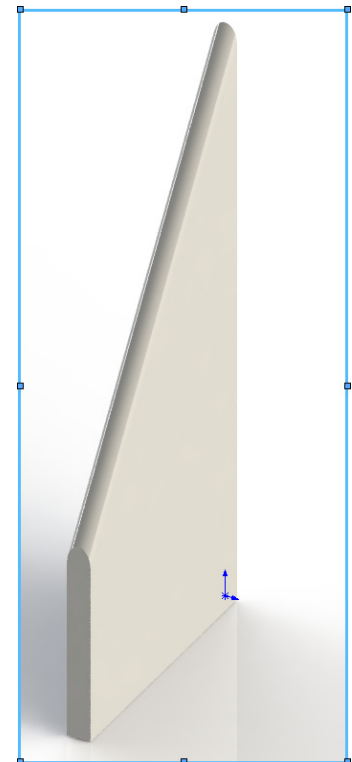
Step 6. Click **Integrated Preview**  on the Render Tools toolbar, **Fig. 23**.



**Fig. 21**



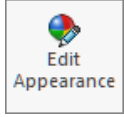
**Fig. 22**



**Fig. 23**

## H. Appearance.

Step 1. Click **Edit Appearance** on the Render Tools toolbar.



Step 2. In the Appearances Task pane, expand **Miscellaneous**, click **Studio Materials** and in the lower pane select **reflective checker floor**, Fig. 24.

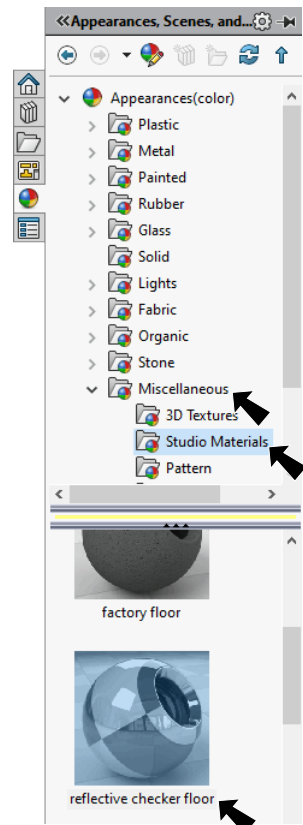


Fig. 24

Step 3. Click Back over in the Appearances Property Manager under Color, Fig. 26 set **RGB values** to:  
**R 167**  
**G 209**  
**B 255**  
 click OK.

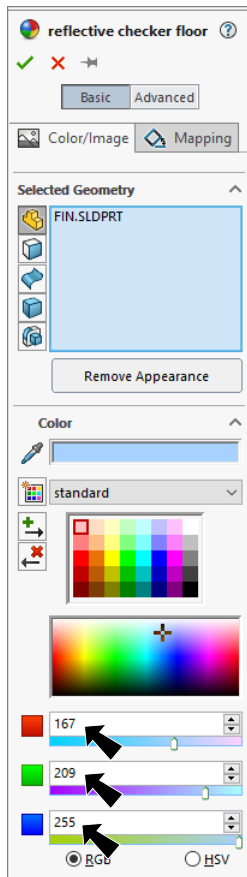
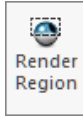
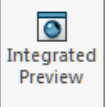


Fig. 26

Step 4. Turn off **Integrated Preview**, then **Render Region** when done.



Step 5. Save. Use **Ctrl-S**.

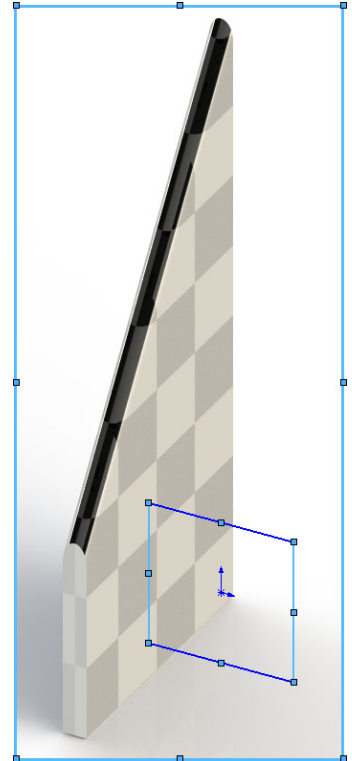


Fig. 25

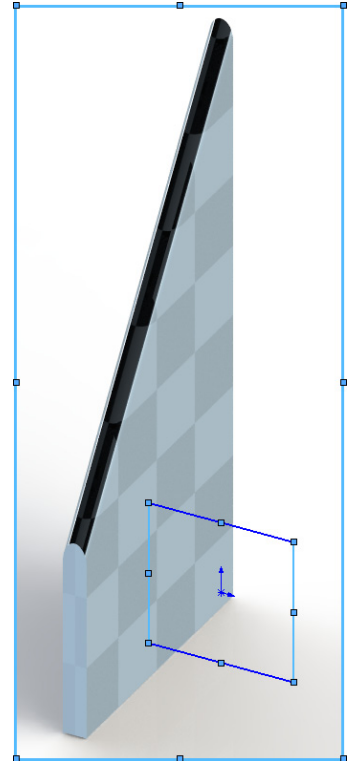


Fig. 27