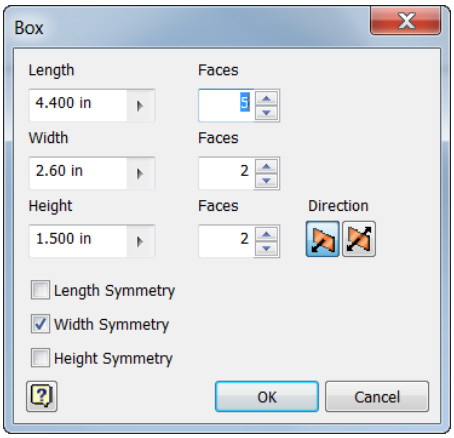
College of Engineering – UIUC
Department of Industrial and Enterprise Systems Engineering
SE101 Engineering Graphics and Design

MA5 – Freeform Modeling

Use Inventor to create a multibody model of a computer mouse. You are free to create your own mouse, or you can follow the steps provided below. In either case, the mouse should contain the following features: sculpted body, shell, split into 4 bodies (i.e., 3 sketches), a lip and a groove.

Open the MA5_images file, and then use Save As to rename the file. Using the images (top and side views) as a guide, create a T-splines box. Here are some recommended settings for the initial box:



Use the top and side view images and the Inventor 2017 Essential Training (Chapter 12 Creating Sculpted Objects) videos on Lynda.com as a guide for shaping the T-splines body of the mouse. You really only need to translate vertices (points) to get a shape that looks something like this:

Shell the body, using a wall thickness of around 0.1 inches.

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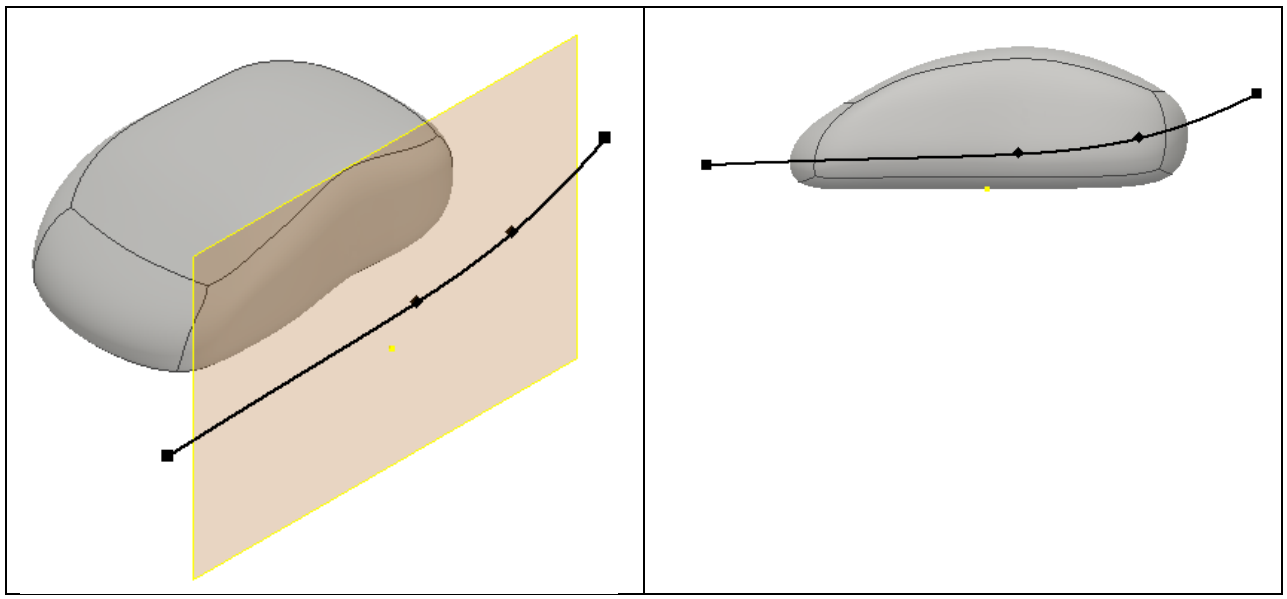
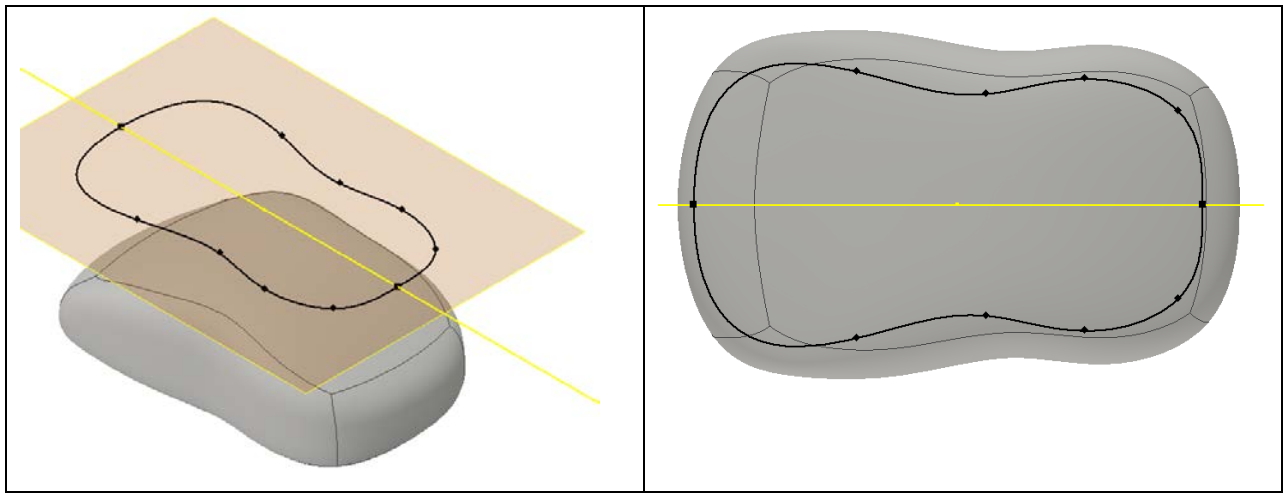
Use an interpolating spline to create a parting line sketch, as shown below:



Use interpolating spline and mirror to create this sketch. Constrain the spline handles to be perpendicular to the projected axis at both endpoints of the spline to ensure a smooth continuous curve, once mirrored.



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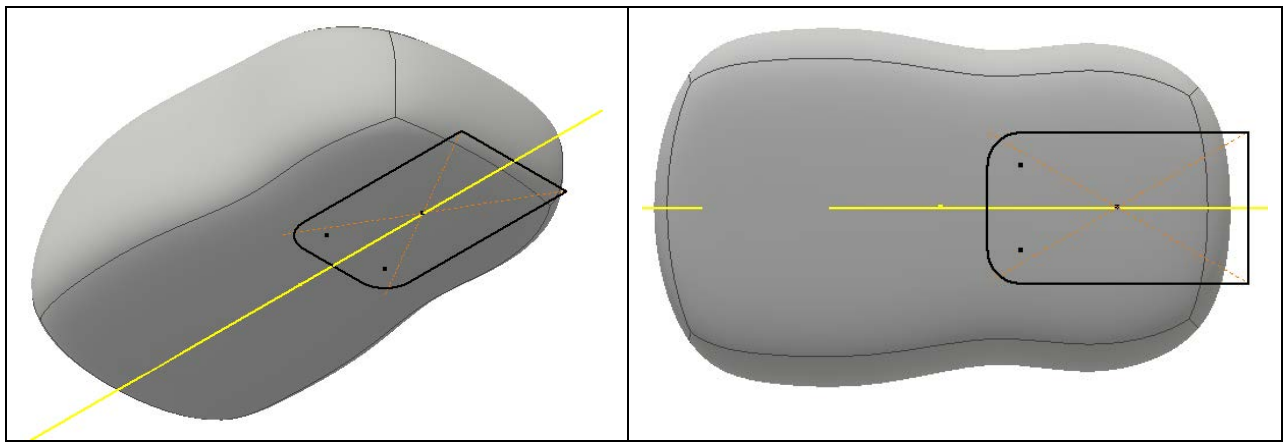
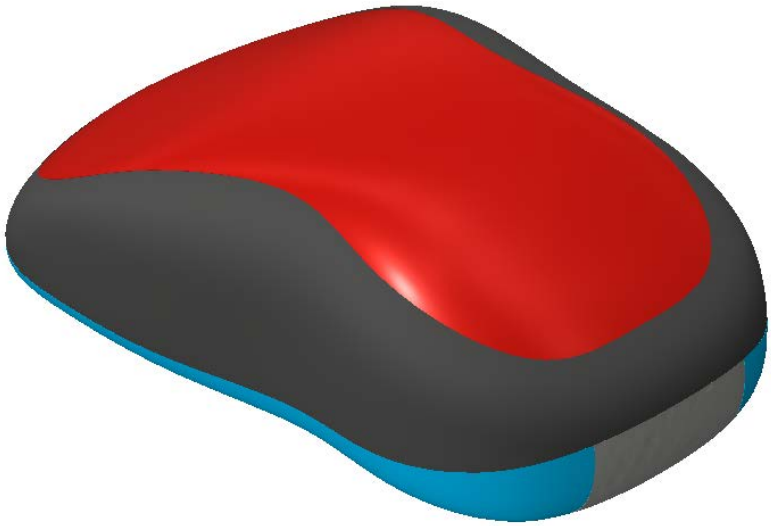
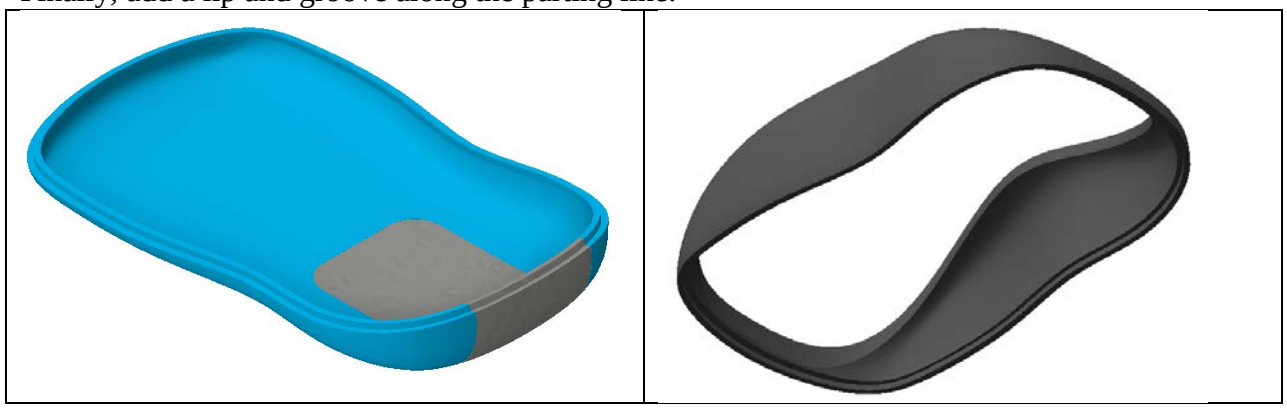
Create another sketch for the battery compartment:



Use the three sketches to split the freeform body into four bodies, similar to that shown here:



Finally, add a lip and groove along the parting line.



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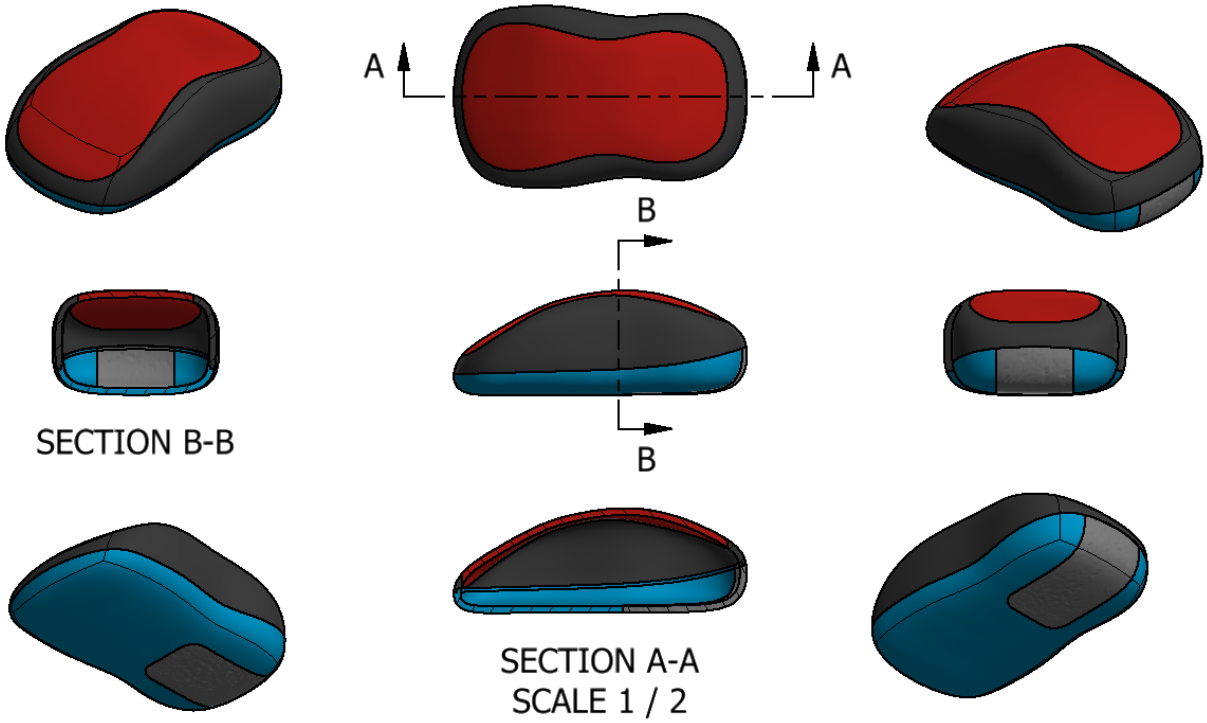
Change the Appearance (color) of the four bodies so that they are easy to distinguish from one another, and then create a drawing (nine views, color, two section views, etc.) similar to that shown below:



Save the drawing (Save Copy As) in PDF format, and upload it to Compass.