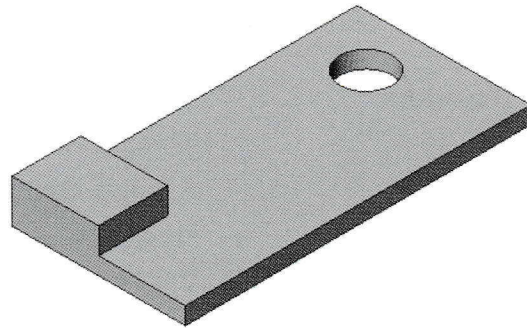


Exercise 8: Plate

Create this part using the information and dimensions provided. Sketch and extrude profiles to create the part.

This lab reinforces the following skills:

- Sketching.
- Base Extrusion.
- Boss Extrusion.
- Cut Extrusion.



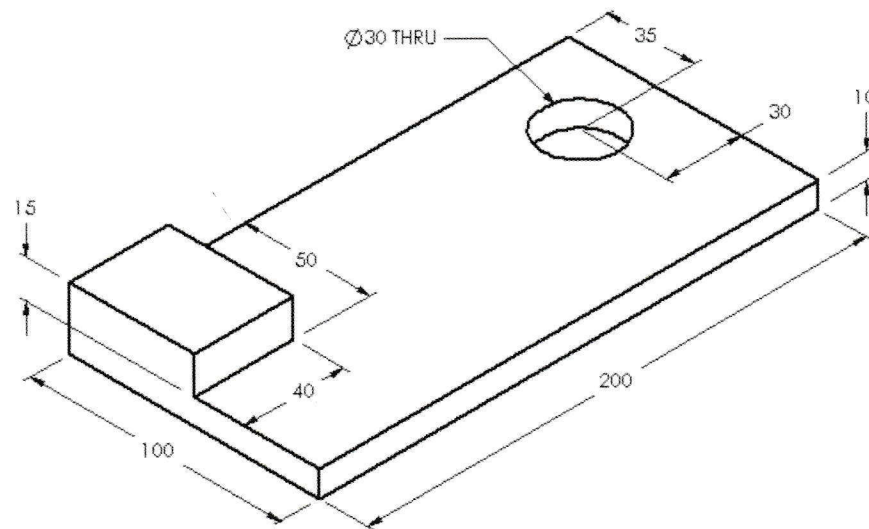
Design Intent

Use the design intent to create the part.

1. The part is not symmetrical.
2. The cut hole is a through hole.

Dimensions

Use the following graphics with the design intent to create the part. Try to build the part *without* referring to the step-by-step instructions in the answer key on the next page.



Answer Key

If you have difficulty building this part, follow the step-by-step procedure listed below.

Procedure

The process will be broken down into the three extruded features: a base, a boss and a cut.

Sketch

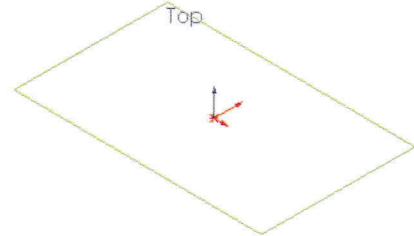
A single sketch can contain all the necessary contours for the part.

1 Open a new part.

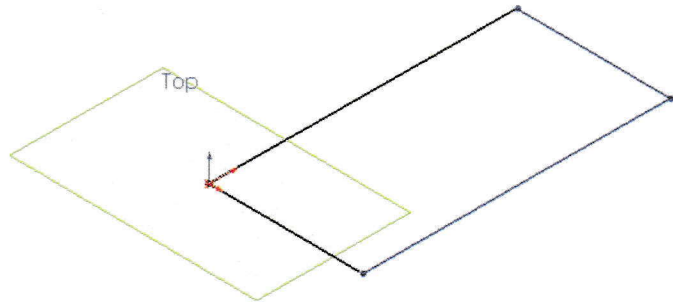
Use the Part_MM template in the Training Templates folder.

2 Open a new sketch.

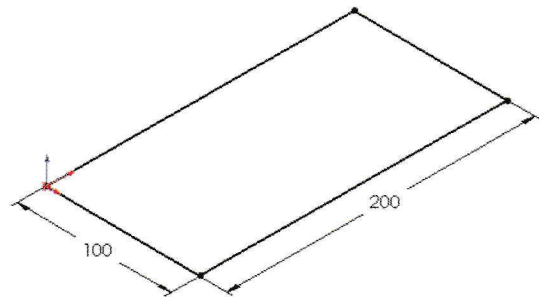
Using the Top reference plane, create a sketch. Change the view orientation to Isometric. The red axes of the sketch will appear on the screen.

**3 Sketch geometry.**

Sketch a rectangle that starts at the origin.

**4 Dimensions.**

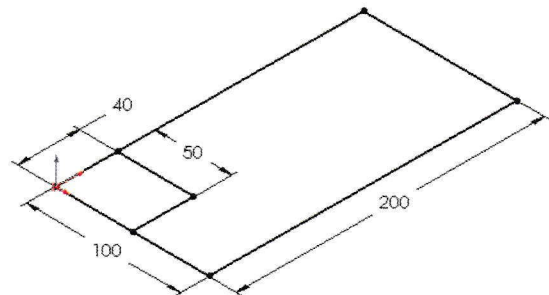
Fully define the sketch by adding two dimensions as shown.

**Note**

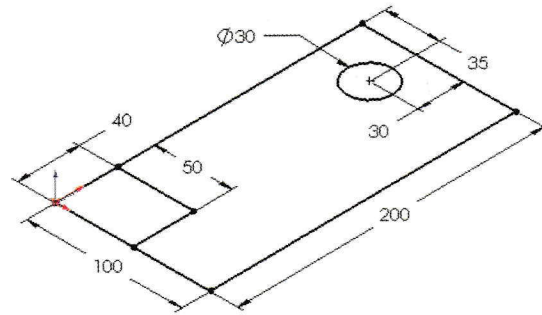
The reference plane has been hidden for clarity.

5 Sketch two lines.

Sketch a horizontal and a vertical line. Dimension them as shown.



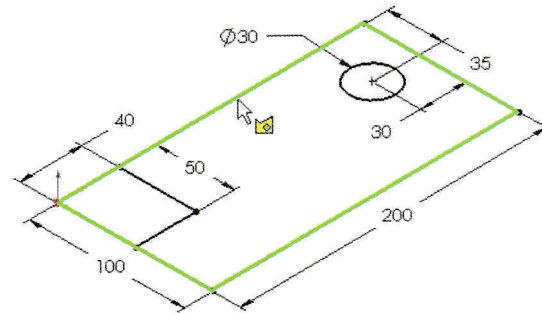
- 6 **Sketch a circle.**
Sketch a circle and dimension it as shown.




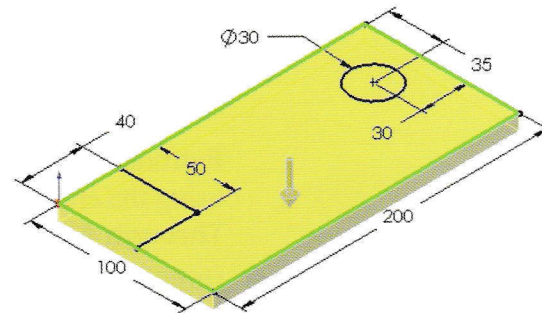
First Feature

The first feature uses a rectangular contour to create a flat plate solid.

- 7 **Select the contour.**
In the graphics area, right-click, and select **Contour Select Tool** from the shortcut menu. Select the rectangle as the contour, and click **OK**.

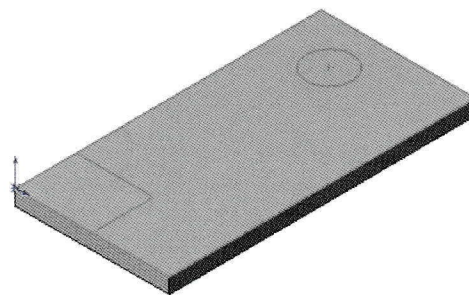


- 8 **Extrusion.**
With the contour selected, click . Extrude the contour **10mm downwards** using the **Blind** end condition.



Note

When you create a feature using contour selection, the sketch remains shown rather than hidden so that it can easily be reused for other features.



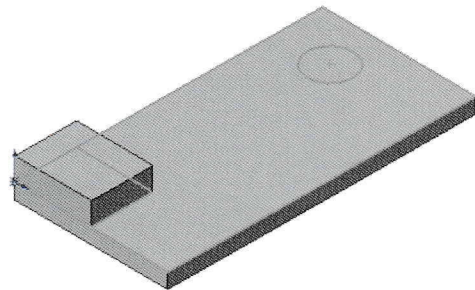
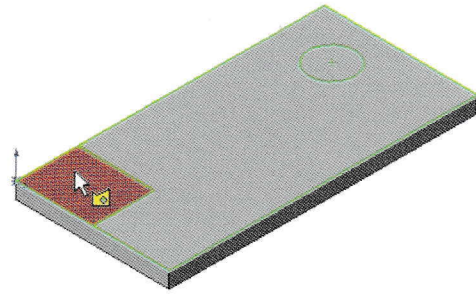
Boss Feature

The boss feature is created by extruding the small rectangular region.

9 Boss extrude.

Use the **Contour Select Tool** to select the small rectangular region.

Extrude the contour as a boss **15mm upwards** using the **Blind** end condition.

**Cut Feature**

A circular extruded cut will complete the model.

10 Cut extrude.

Use the **Contour Select Tool** to select the circle.

Extrude the contour as a cut using the end condition **Through All**.

11 Hide the sketch.**12 Save and close the part.**