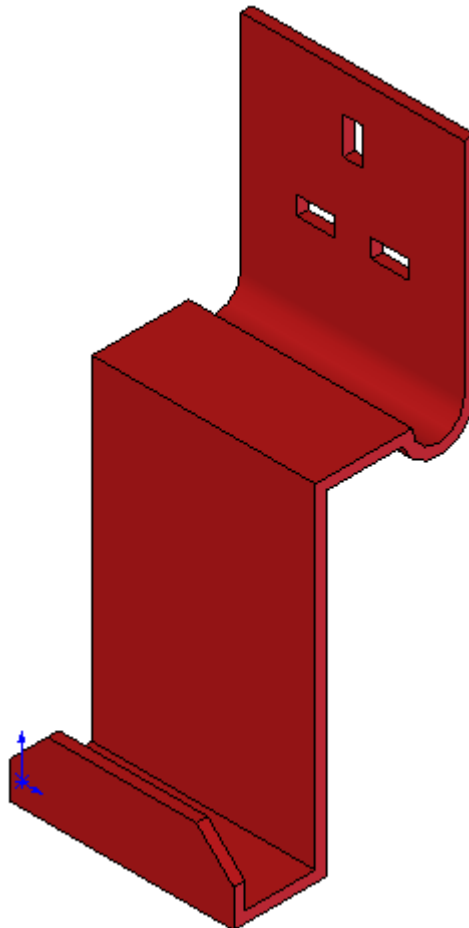# EXERCISE ONE:

MOBILE PHONE HOLDER.
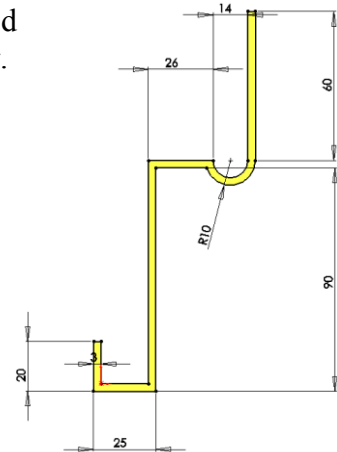

Prerequisite knowledge   Students must complete the introductory exercises from folder One:
"**Introduction to SolidWorks.**"

Focus of lesson   This lesson will focus on using the following commands
Sketching, Extrude Boss/Base, Extrude cut and Chamfer.

Commands Used   This lesson includes Sketching**,** *Extruded Boss/Base, Extruded Cut,* Chamfer.
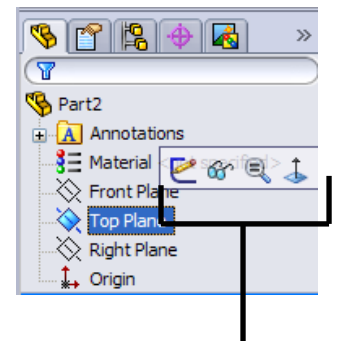
Save File	Select **File, Save As**, filename Mobile Phone.

Where to start?   The only sketch of the part to be created is based
on a sectional view of the mobile phone holder.

<div align="center">

Using the Command Manager and Heads Up Command.

</div>

Solidworks 2009 not only has a Command Manager to allow you to create sketches,
features etc but it also contains a heads up command which shows you relevant
commands as you work. The heads up command will automatically activate when
you choose a plane, and will offer you the most used commands for
starting a Solidworks part.

<div align="right">

HEADS UP COMMAND

</div>

Heads up Commands

 Sketch

  Show/Hide (Transparency)

 Zoom Selection

 View – Normal To

<div align="center">

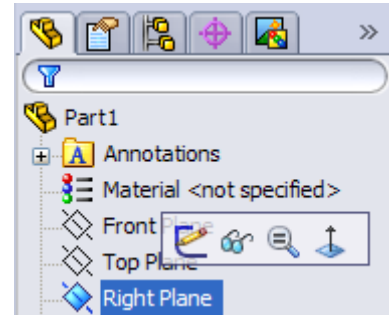**These options are also available from the Command manager.**

</div>

As you create sketches and features the **Heads Up commands** can be accessed by pressing **S** on the keyboard.
The commands that are offered will change as you progress through the model. At all times the options that are
offered by the **Heads Up Command** are available from the command manager.

<div align="center">

In this exercise we will use the Heads Up command option.

</div>

Introduction to Parametric Modelling
Mobile Phone Holder.

Getting started

Choosing a plane
Select the **Right plane** from the manager
Tree, then select Sketch from the options
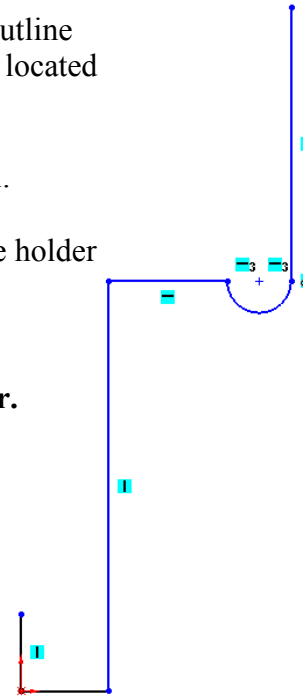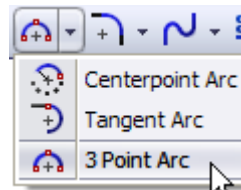Available

Creating a sketch
Press **S** and click the **Line** command, create an outline
sketch of the mobile phone holder with one point located
on the origin.
As we are using the Right plane we
will create a sketch of the End View of the model.

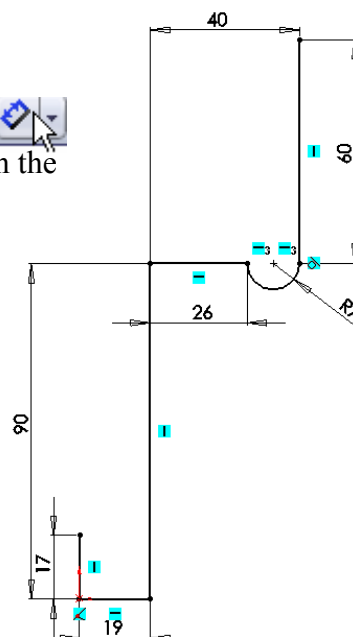Create a sketch of the outline of the mobile phone holder
as shown:

Sketch commands used: *Line* and *3 Point Arc*
Note: 3 point arc is found on the sketch toolbar.

Dimensioning the Model:
Press **S** and select **Smart Dimension**
from the sketch toolbar and dimension the
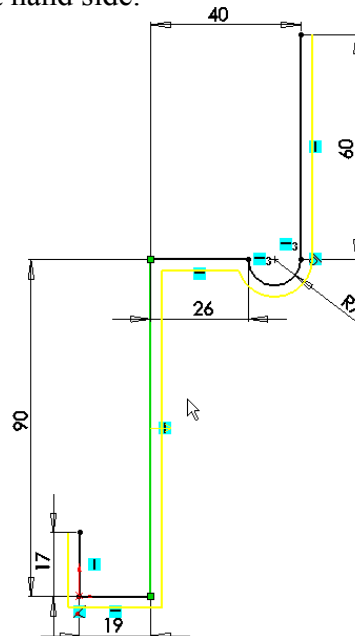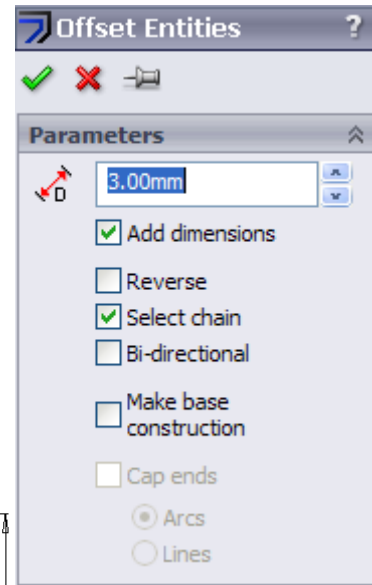sketch as shown.

.

Offset Sketch: -

Next select the offset command ⬚ from the Sketch toolbar. The offset entities toolbar appears in the left hand side of the SolidWorks screen.

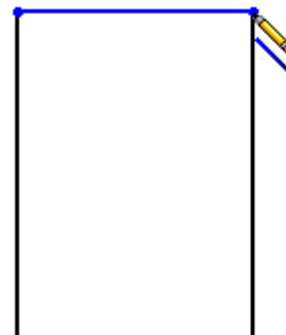In the dimension box enter a value of **3mm,** and choose **Select chain** as shown.

Next left click anywhere below the sketch, this offsets the sketch to the right hand side.

Offset Entities ?

Parameters

3.00mm

☑ Add dimensions

☐ Reverse
☑ Select chain
☐ Bi-directional

☐ Make base construction

☐ Cap ends
  ◉ Arcs
  ○ Lines

40

60

3

26

R7

90

17

19

Click OK ✔ to finish offset.

Finally close the sketch by drawing selecting the Line command and joining the open ends as shown.
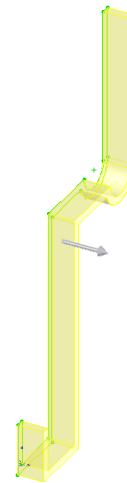
Exit the sketch.

Creating the feature

Press **S** and choose **Extruded Boss/Base**
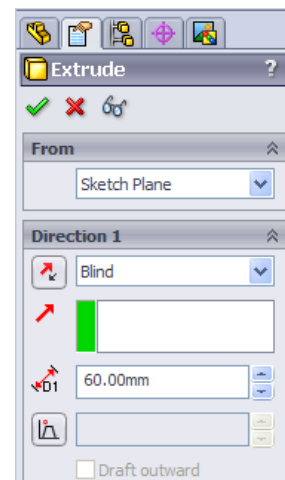from the **Features Toolbar**

The model will appear as an isometric
View. SolidWorks will automatically
Extrude the model **10mm.** The extrusion
Will show as a yellow preview.

Extrude Feature Settings

Extrude to 60mm

Select **Blind** extrusion.

Finally select the OK button to finish extrusion.

Left click on the feature (Extrude 1) in the manager tree
And press F2. Rename the feature **Phone Holder**.
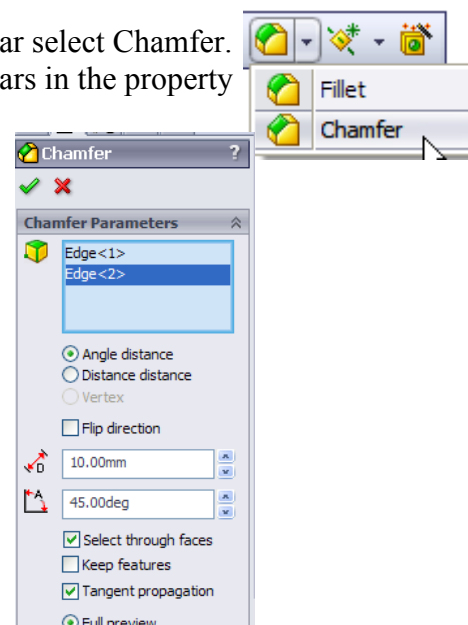
Insert Chamfer

Press S, and from the Features toolbar select Chamfer.
The chamfer options manager appears in the property
Manager.

Select **Angle Distance**
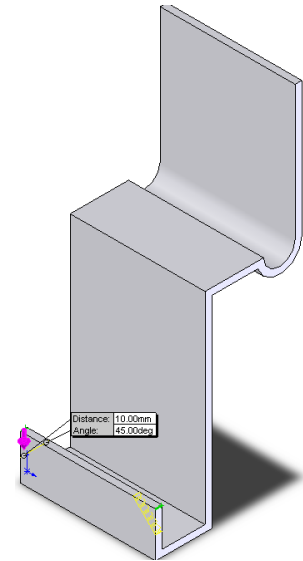
Select **10mm** as **distance**

Select **45** as the **Angle**

Select **Full preview**

Edge Selection   Select the edges shown below and click **OK**
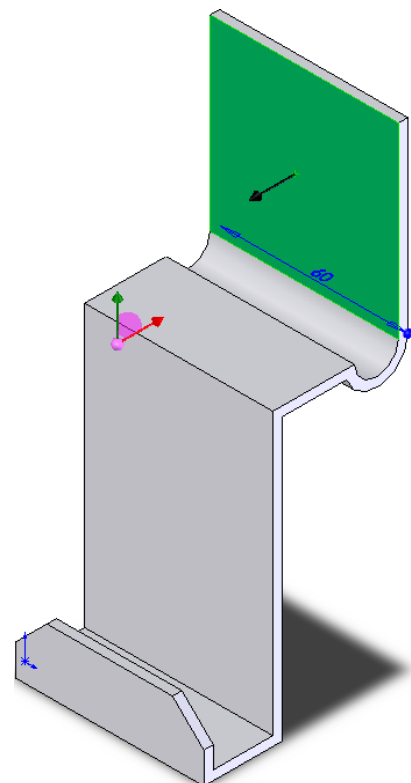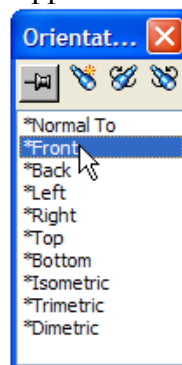
To rotate the holder to view the edge to be chamfered

Select 🔄   rotate view from the view toolbar and then by

holding down the left mouse button rotate the model.

Sketching the Plug Holes: Left click the face as shown.
The chosen face will highlight in
Green as shown. By selecting the
The face we can now create a sketch
On that face.

Now select Front View to draw
On the selected face.

To select front view press the
Spacebar and select the view from
The dialogue box which appears
As shown

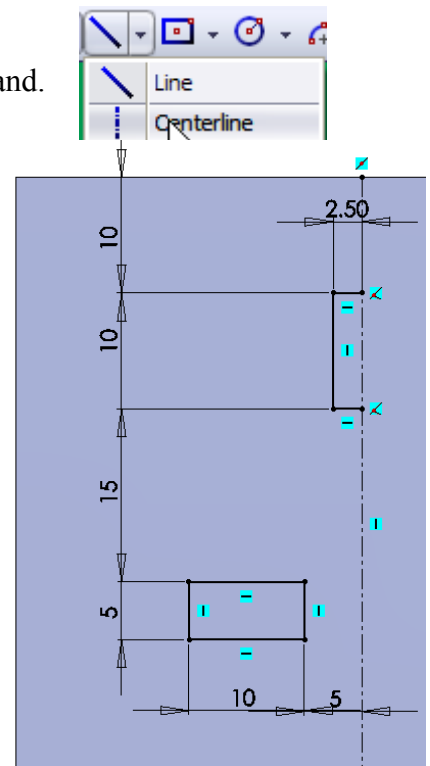Rename the feature as **Corner Chamfers,** by pressing F2.

Creating the Sketch:

From the sketch toolbar select Centreline from the drop down menu of the line command.

Next move the cursor over the top edge. The centre of the edge will automatically be highlighted as shown. Left click on the point and draw a vertical line down the entire face as shown.
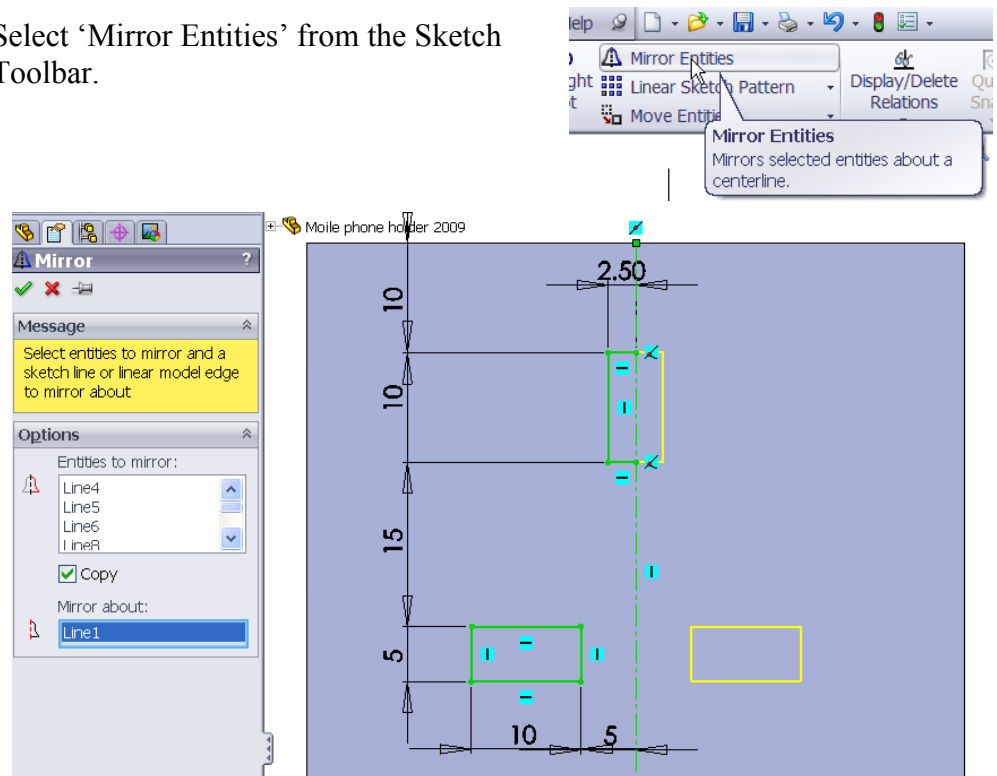
Next create a rough sketch of the plug holes as shown on one side of the centre line.

Dimension as shown.

Mirror the Entities:

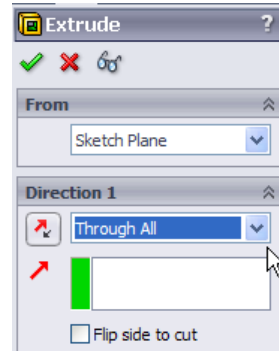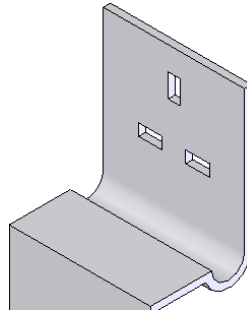Select 'Mirror Entities' from the Sketch Toolbar.

Select the lines to mirror. Mirror about the centreline of the face.

Introduction to Parametric Modelling
Mobile Phone Holder.

Creating the Feature: Press **S,** and select Extrude Cut from the feature manager.

From the extrude cut options box which appears
On the left hand side of the screen select the following
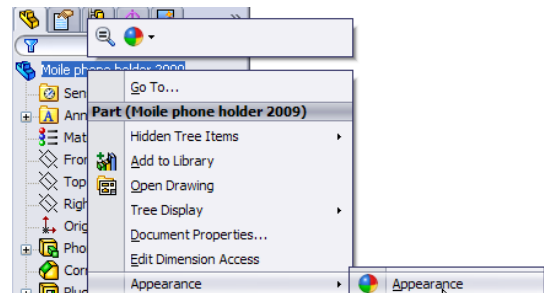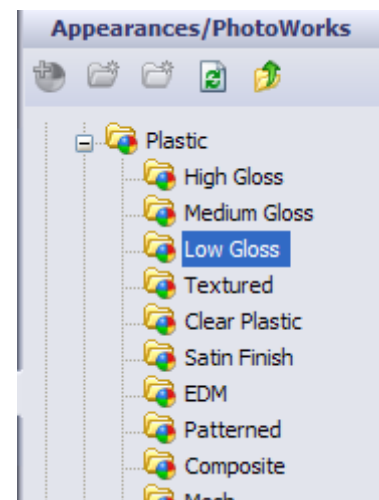Option:

Direction: Through All

Press Ok to finish.

Add Colour to
the Holder

From the feature manager,
Right click on **Mobile phone**
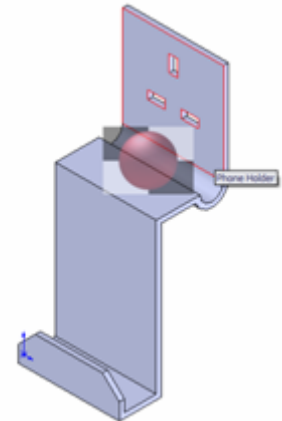**holder** and Select
"Appearance".

From the appearance options which
appears on the right hand side
select your choice of appearance.
In this instance **"Plastic" – "Low**
Gloss" has been chosen.

Toggle through the Low Gloss options
Which appear underneath the appearance
Option box until you find a suitable colour.
In this instance Red has been chosen.

To apply the material click and hold
Down the left mouse button and
Drag the icon over the model.
Release the left mouse button over
The model to apply the colour.

Finished Model: