College of Engineering – UIUC
SE101 Engineering Graphics and Design

MA7 Instructions

Part One: Top-Down Assembly

Use Inventor to create an assembly model of the single-cup coffee maker pictured in Figure 1. Figure 2 depicts the three components (i.e., parts) of the assembly. These parts are named (from left to right) the Cup, the Bucket, and the Lid. A part model for the Cup is provided on Compass. **You are not given specific dimensions for creating the Bucket and Lid parts**. Rather, you should assume reasonable dimensions for these parts by using the given Cup part. To ensure that the dimensions are reasonable, you are to create these two parts within an assembly file. **All parts should be modeled in inches.** An animation of the disassembly and assembly process is also posted on Compass.

Figure 1: Assembled coffee maker

Figure 2: Parts comprising the coffee maker assembly

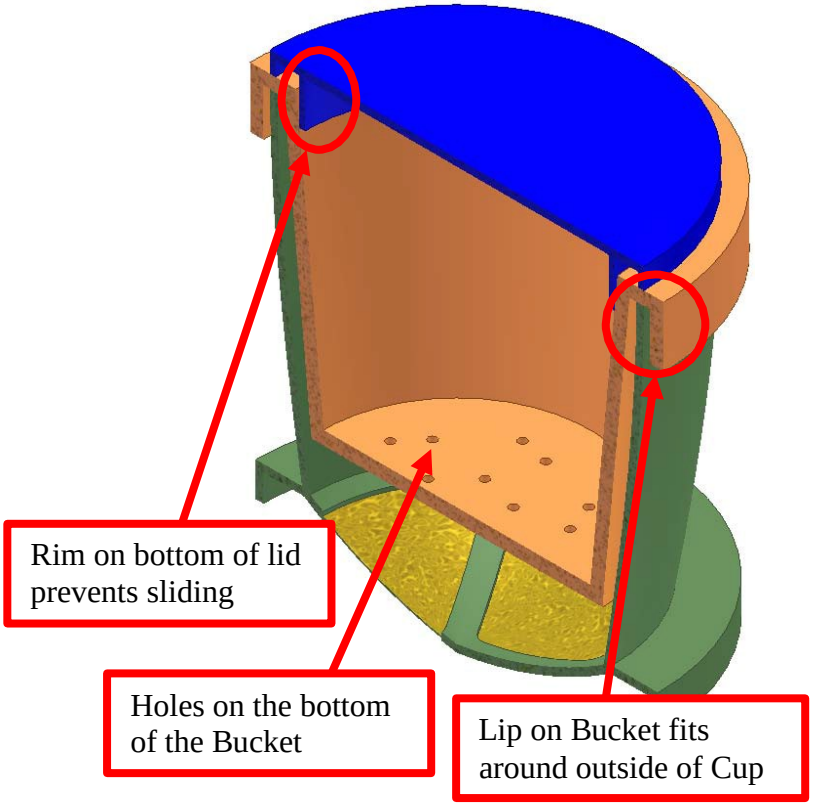

Figure 3: Section view of the assembly

Requirements:

1. When the coffee maker is assembled, there should be no interferences between the parts
2. Features described in Figure 3 are to be included.

To turn in this part of the assignment, **you should submit the following four plots** (all multiviews should have scale 1/2" = 1"):

1. Three multiviews of the assembly (one of which is a descriptive section view), an isometric of the assembly, and a sectioned isometric view.
2. An exploded view of the coffee maker, with balloons and a parts list
3. Two multiviews and an isometric view of the Lid, with dimensions and centerlines
4. Two multiviews and an isometric view of the Bucket, with dimensions and centerlines

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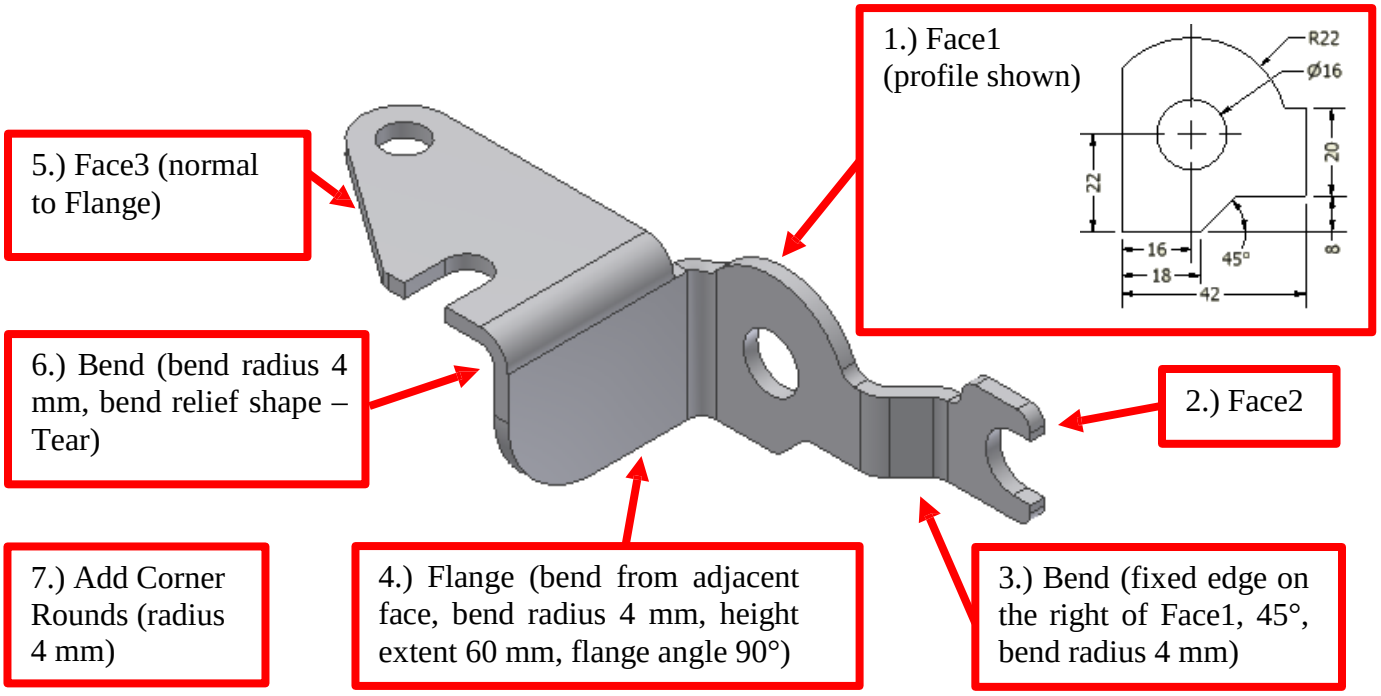
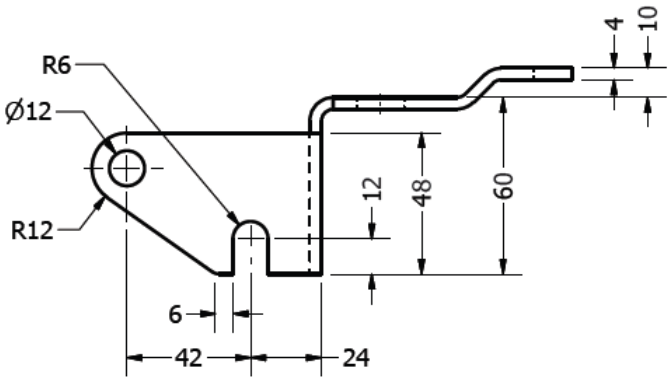
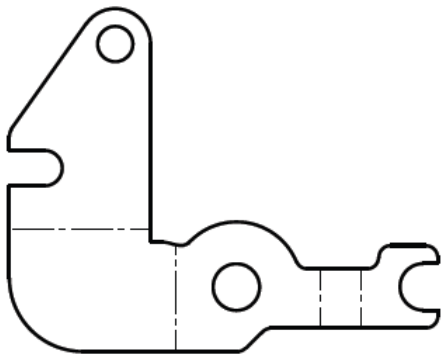
Part Two: Sheet metal modeling

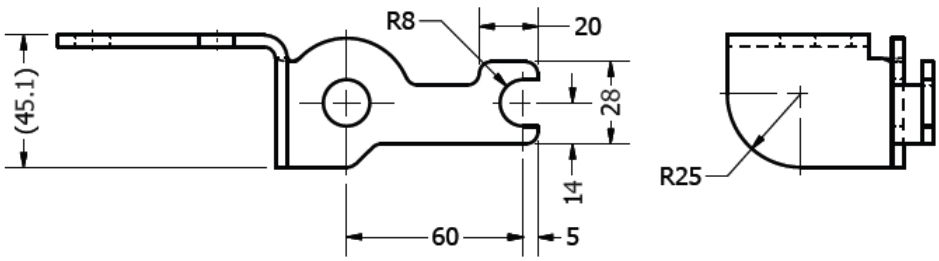
Use the Sheet Metal environment in Inventor to create the bracket. The units are **millimeters**. To turn in this part of the assignment, you should submit one plot containing three multi-views of the bracket and a flat pattern (all at a scale of **1:2**). An isometric should also be included. Suggested build strategy steps are noted in the isometric view. The sheet thickness is 4 mm.







Flat Pattern



Note: All corner rounds and bend radius is 4 mm