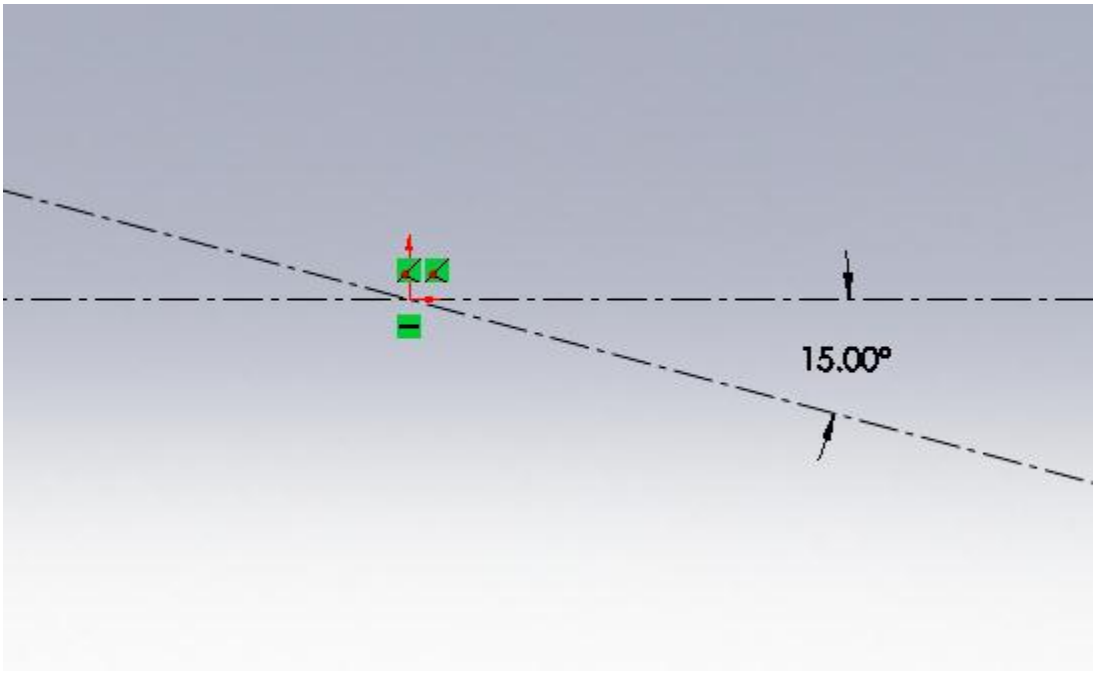
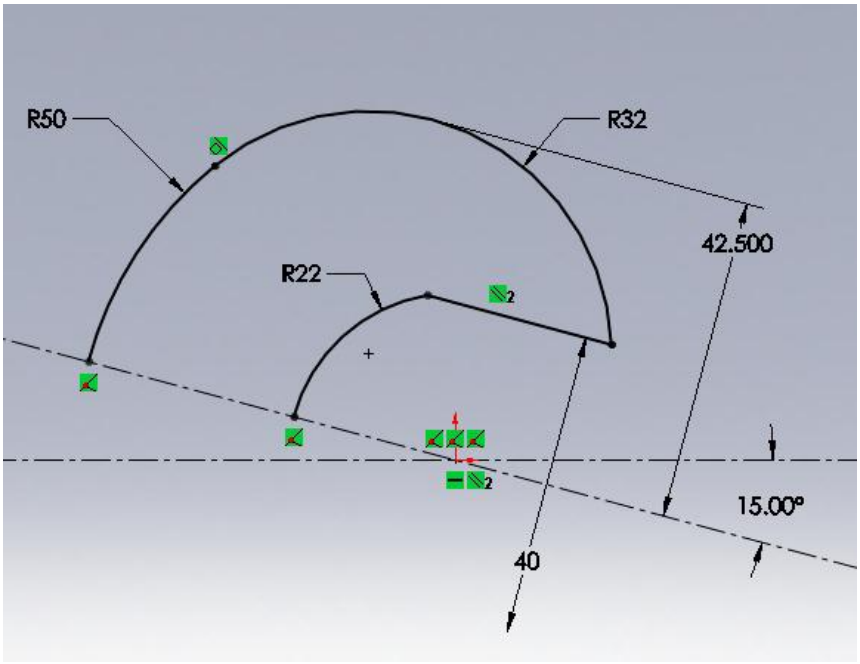
MIDTERM - WRENCH

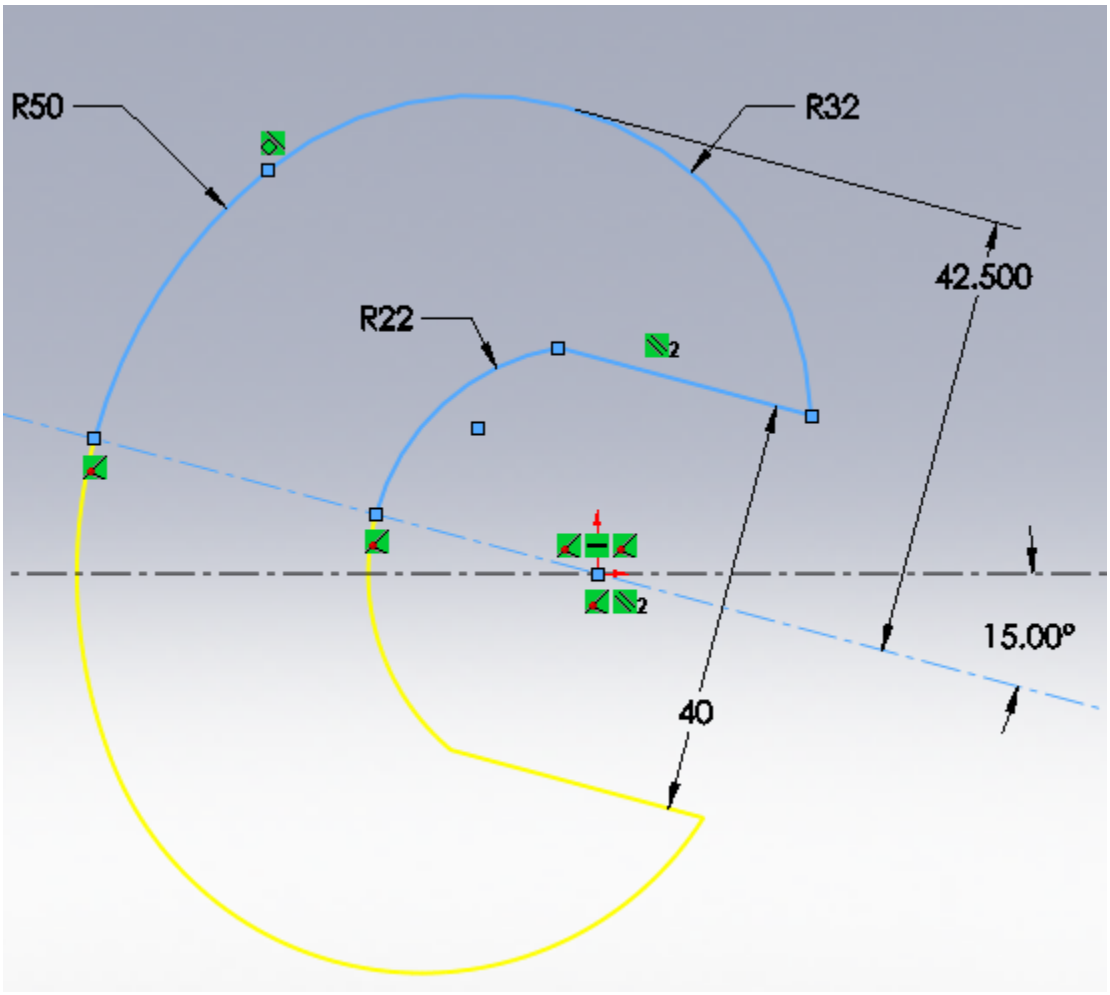
1. Change units to MILLIMETERS.
2. Draw a centerline on the x-axis, and another one that crosses through the origin angled down at 15°.



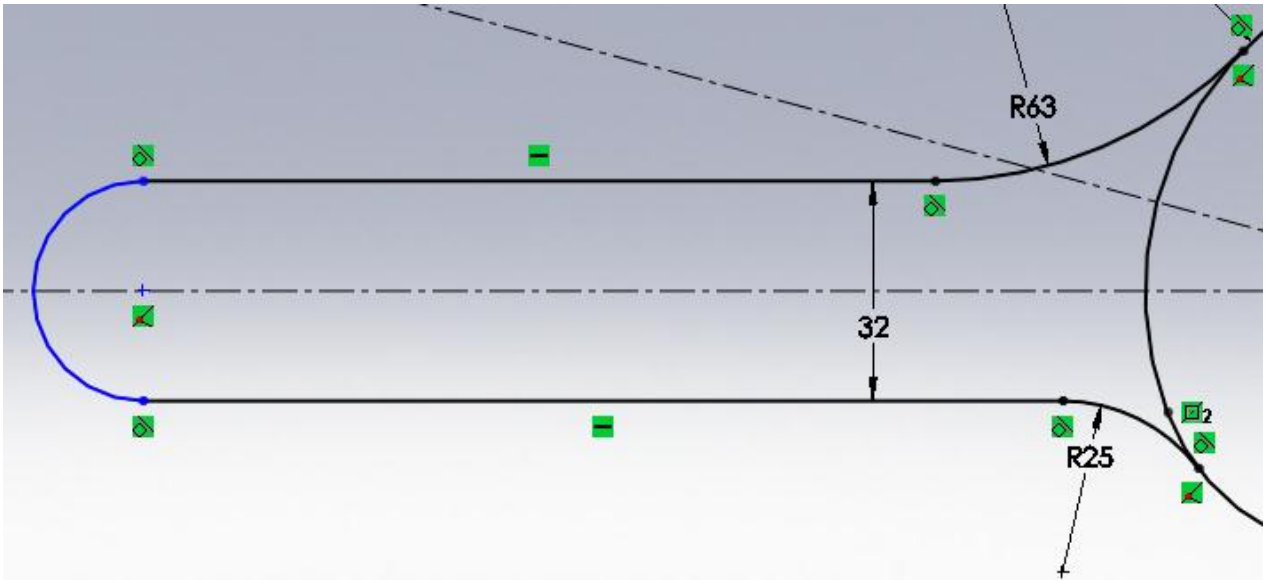
3. Draw the wrench head. Add the parallel constraint shown, as well as the tangent constraint between the R50 and R32 arcs.
   *Note that the 40 mm dimension is a mirrored one.
   *Note that the 42.500 mm dimension goes from the centerline at 15° to the tip of the arc (HOLD SHIFT WHEN MAKING THESE DIMENSIONS).
   ***The centerpoints of the R50 arc and R22 arc are the ORIGIN. The centerpoint of the R32 arc is shown as the + sign just inside of the R22 arc.



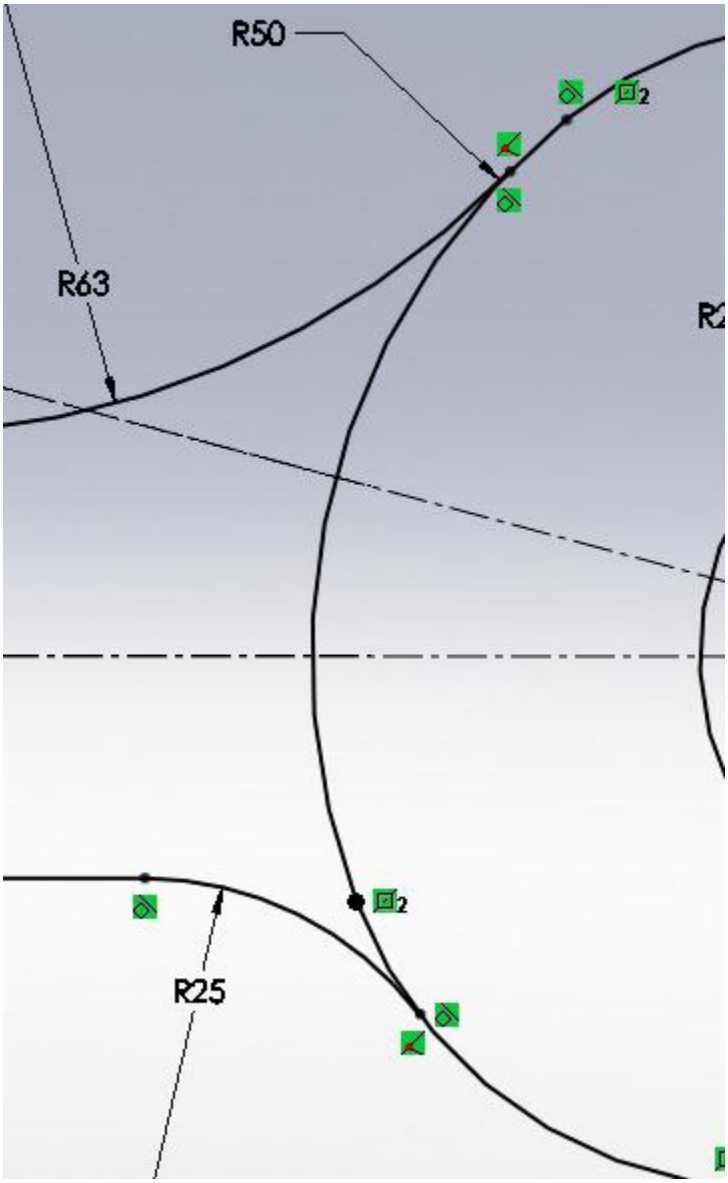
4. Once the above drawing is fully defined, mirror about the 15° slope axis.



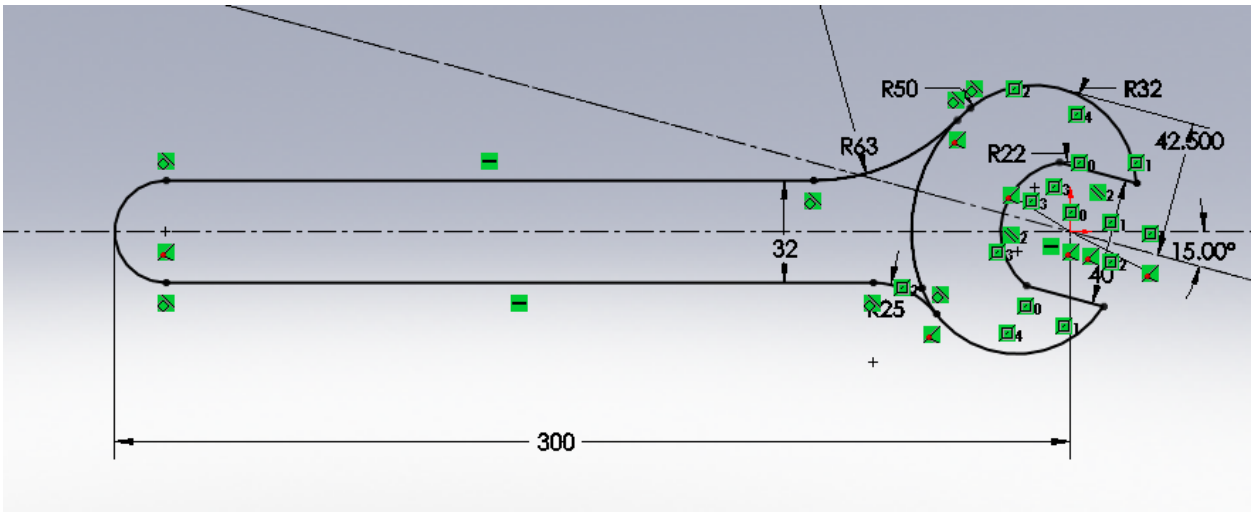
5. Draw the wrench handle.
   *Note that both lines are horizontal, but NOT equal.
   *Note that the arc on the left is tangent to both lines and its centerpoint is COINCIDENT to the x-axis.
   **Note that the R63 arc is tangent to the top horizontal line, as well as tangent to the R50 arc on the wrench head. The R25 arc is tangent to the bottom horizontal line, as well as tangent to the mirrored R32 arc on the wrench head.



***NOTICE THAT THE R63 ARC IS TANGENT TO SOME RANDOM POINT ON THE R50 ARC, NOT AT AN ARC ENDPOINT. ALSO NOTE THAT THE R25 ARC IS ACTUALLY TANGENT TO THE MIRRORED R32 ARC AT SOME RANDOM POINT, NOT THE ARC ENDPOINT (shown on the next picture).



6. Add the 300 mm length dimension, which extends from the ORIGIN to the tip of the handle arc (YOU HAVE TO HOLD SHIFT FOR THIS DIMENSION).



FINAL DRAWING SHOULD LOOK LIKE THIS: