

# Practice Problem 6.1

## Revolve Boss/Cut (Level 6)

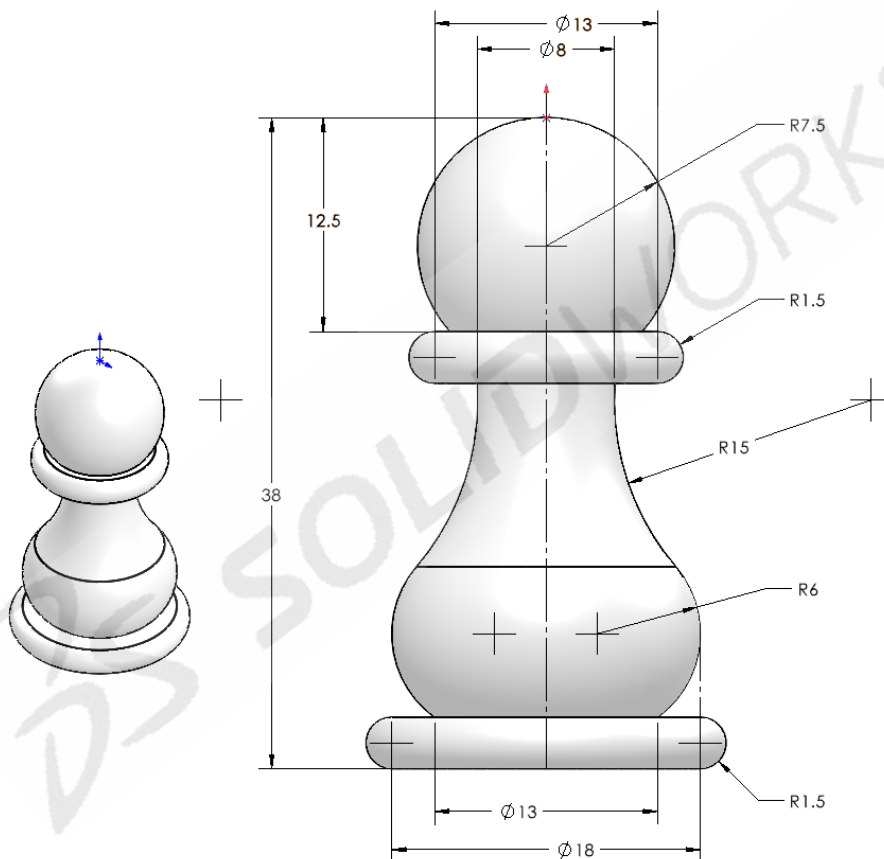
- Units: MMGS
- Difficulty Level: Easy
- Certification: CSWA
- Duration (min): 5
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully-defined.

## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines, Arcs
- Features: Revolves

HINT: This can be built using a single feature.

Volume: 5996 mm<sup>3</sup>



# Practice Problem 6.2

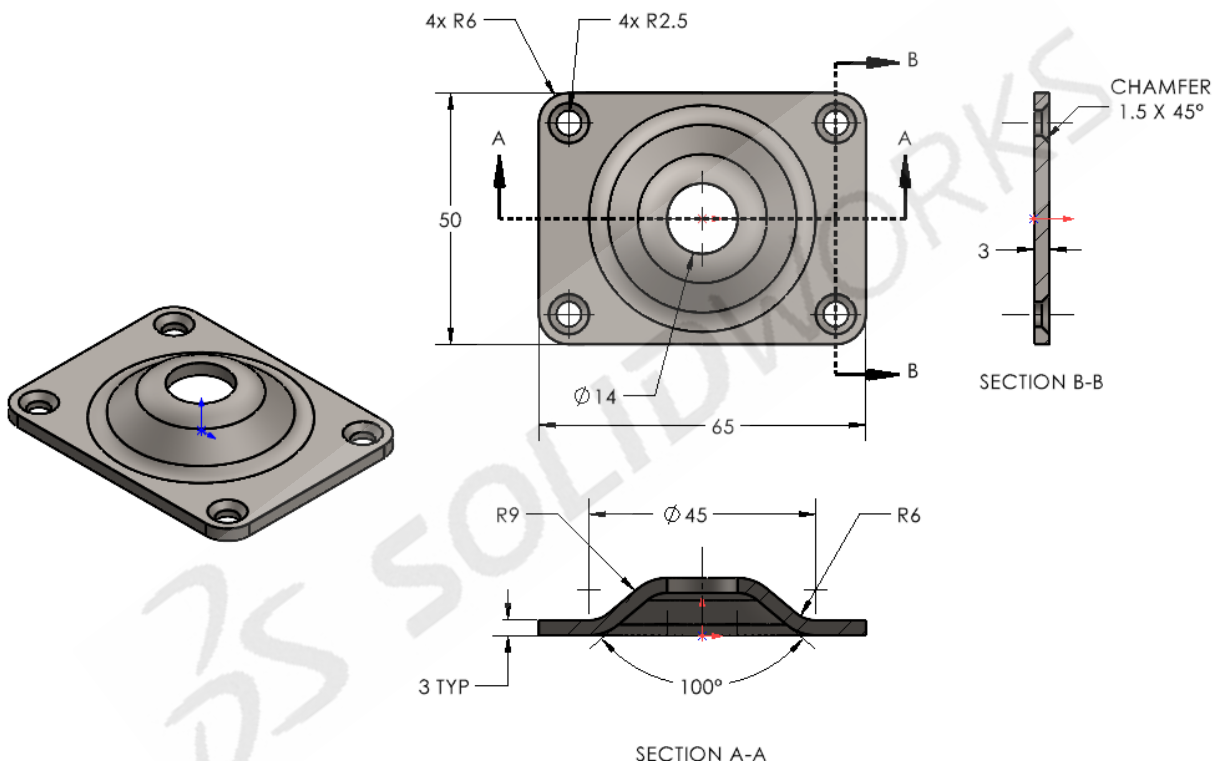
## Revolve Boss/Cut (Level 6)

- Units: MMGS
- Difficulty Level: Medium
- Certification: CSWA
- Duration (min): 10
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully-defined.

## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines, Circles
- Features: Revolves, Extrude Boss, Fillets and Chamfers

Volume: 9603 mm<sup>3</sup>



# Practice Problem 6.3

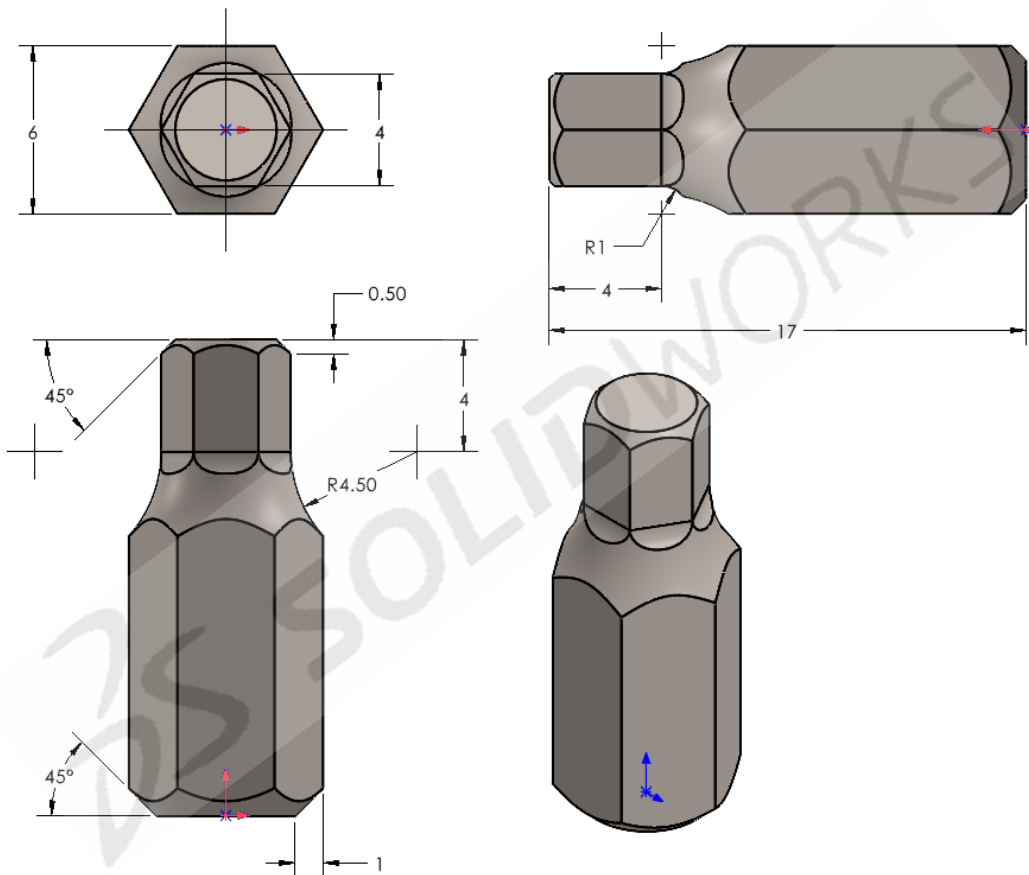
## Revolve Boss/Cut (Level 6)

- Units: MMGS
- Difficulty Level: Easy
- Certification: CSWA
- Duration (min): 5
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully-defined.

## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines, Circles, Arcs, Polygons
- Features: Revolves, Extrude Boss, Fillets and Chamfers
- Reference Geometry: Planes

Volume: 427 mm<sup>3</sup>



# Practice Problem 6.4

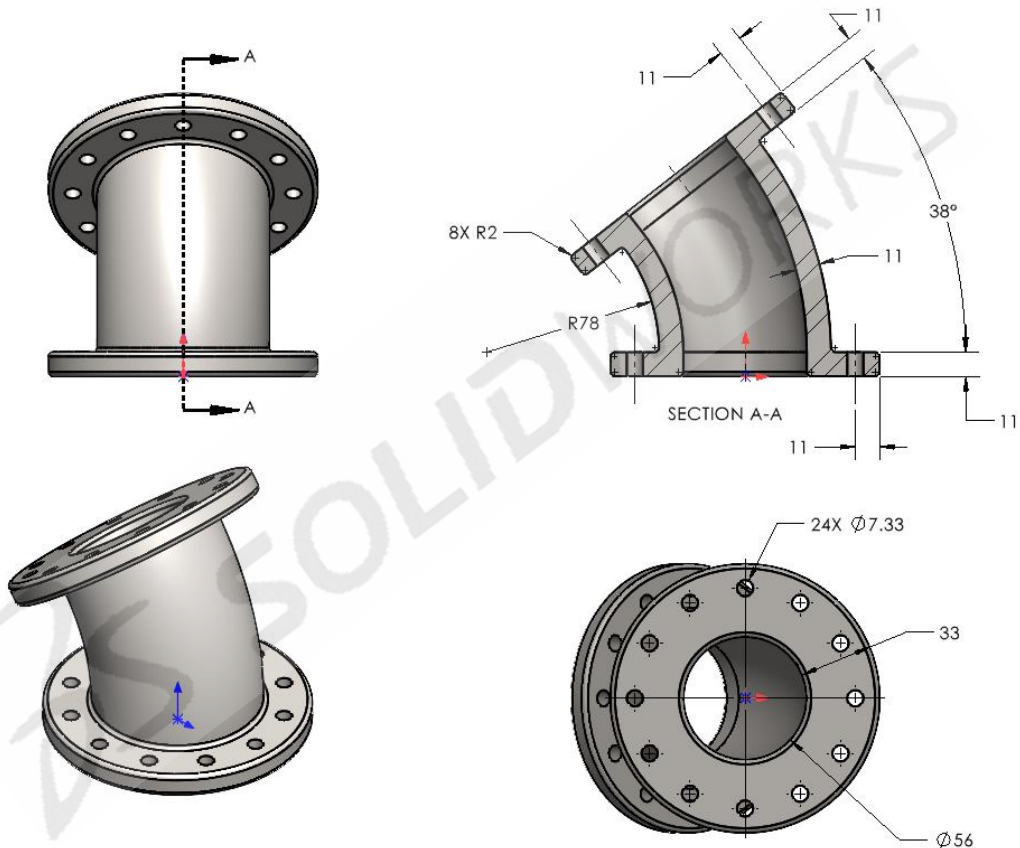
## Revolve Boss/Cut (Level 6)

- Units: MMGS
- Difficulty Level: Medium
- Certification: CSWA
- Duration (min): 10
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully-defined.

## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines, Circles, Arcs
- Features: Revolves, Extrude Boss, Fillets and Chamfers

Volume: 370322 mm<sup>3</sup>



# Practice Problem 6.5

## Revolve Boss/Cut (Level 6)

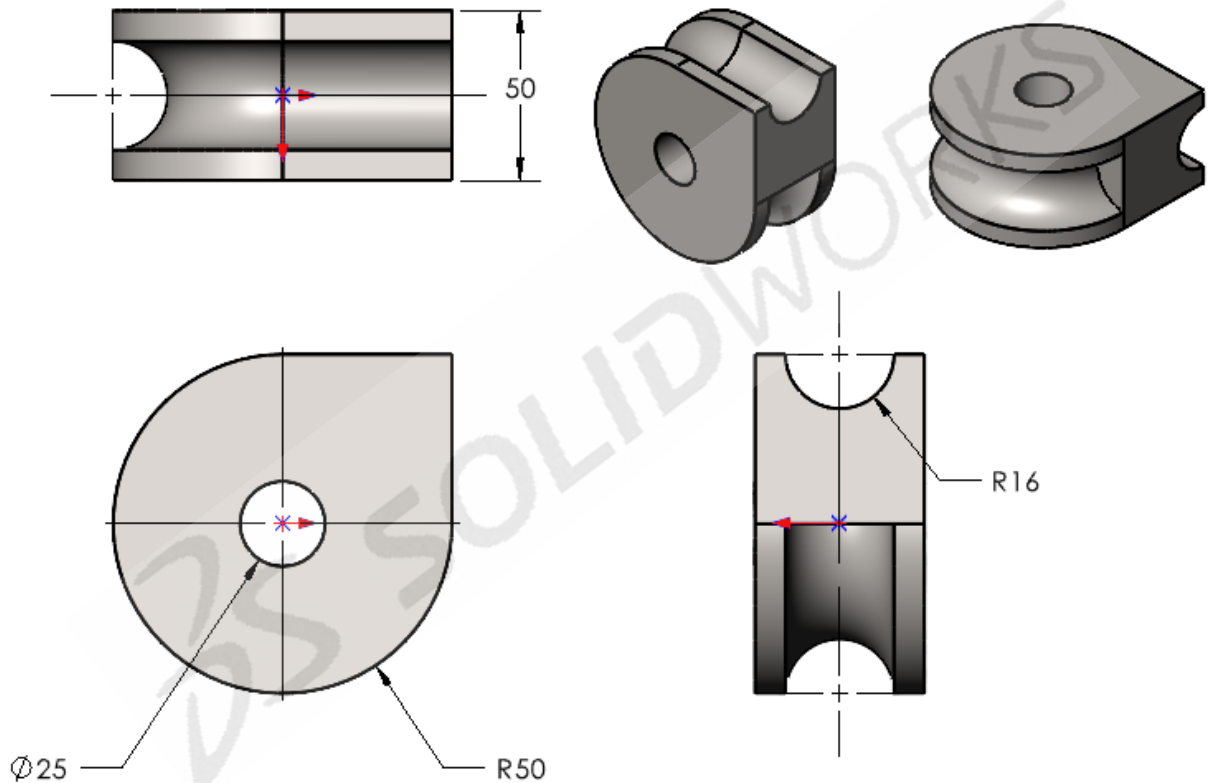
- Units: MMGS
- Difficulty Level: Easy
- Certification: CSWA
- Duration (min): 10
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully-defined.

## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines, Circles, Arcs
- Features: Revolves, Extrude Boss

HINT: Cut with a revolve feature.

Volume: 292994 mm<sup>3</sup>



# Practice Problem 6.6

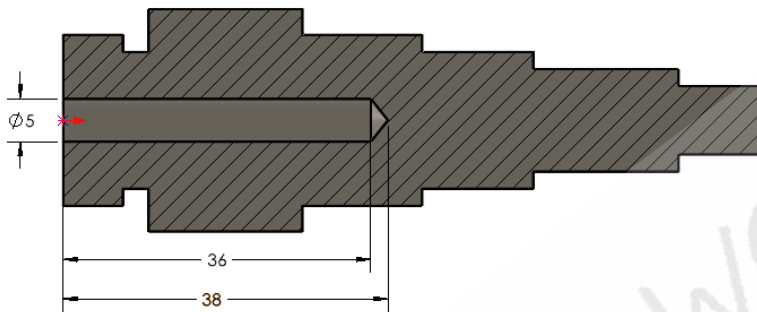
## Revolve Boss/Cut (Level 6)

- Units: MMGS
- Difficulty Level: Easy
- Certification: CSWA
- Duration (min): 10
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully-defined.

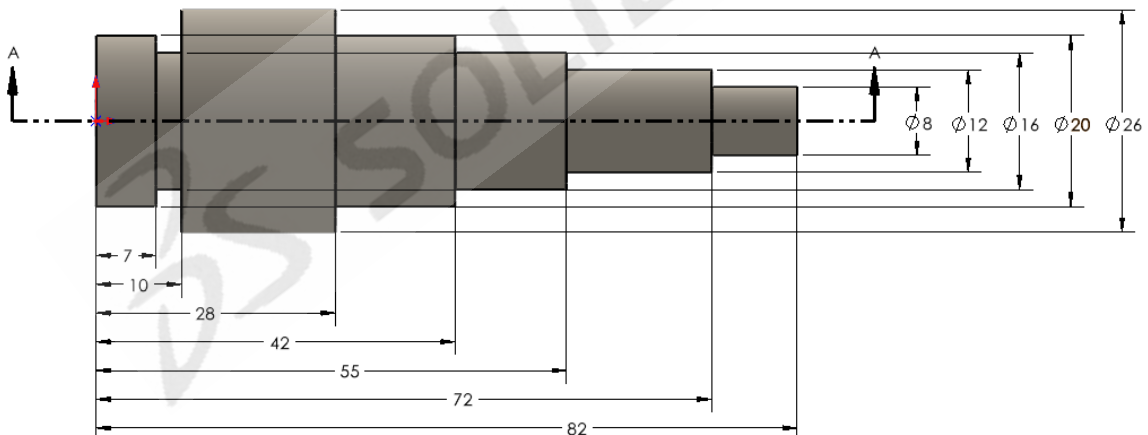
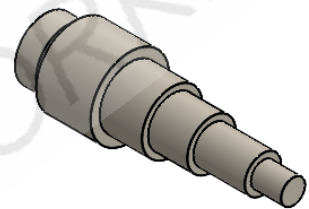
## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines
- Features: Revolves

Volume: 21076 mm<sup>3</sup>



SECTION A-A  
SCALE 2 : 1



# Practice Problem 6.7

## Revolve Boss/Cut (Level 6)

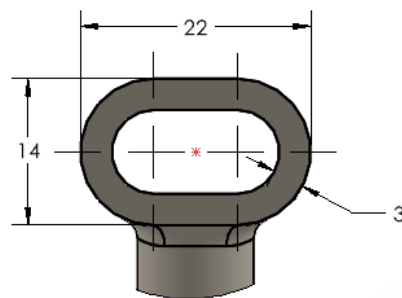
- Units: MMGS
- Difficulty Level: Medium
- Certification: CSWA
- Duration (min): 15
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully-defined.

## Suggested Sketch Tools / Features

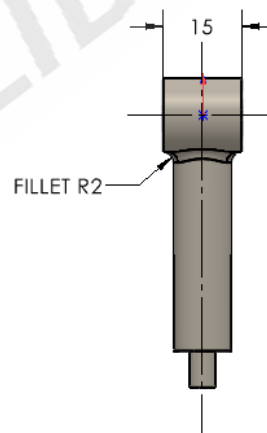
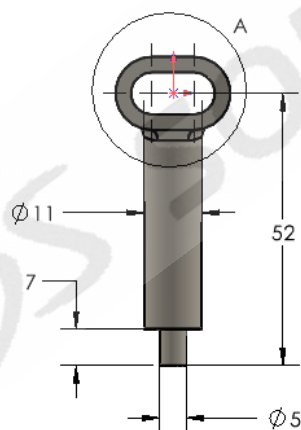
- Sketch: Lines, Centerlines, Circles, Trim, Slots, Offset Entities
- Features: Revolves, Extrude Boss, Extrude Cut

HINT: Slot is dimensioned to the overall width.

Volume: 6049 mm<sup>3</sup>



DETAIL A  
SCALE 2 : 1





# Practice Problem 6.8

## Revolve Boss/Cut (Level 6)

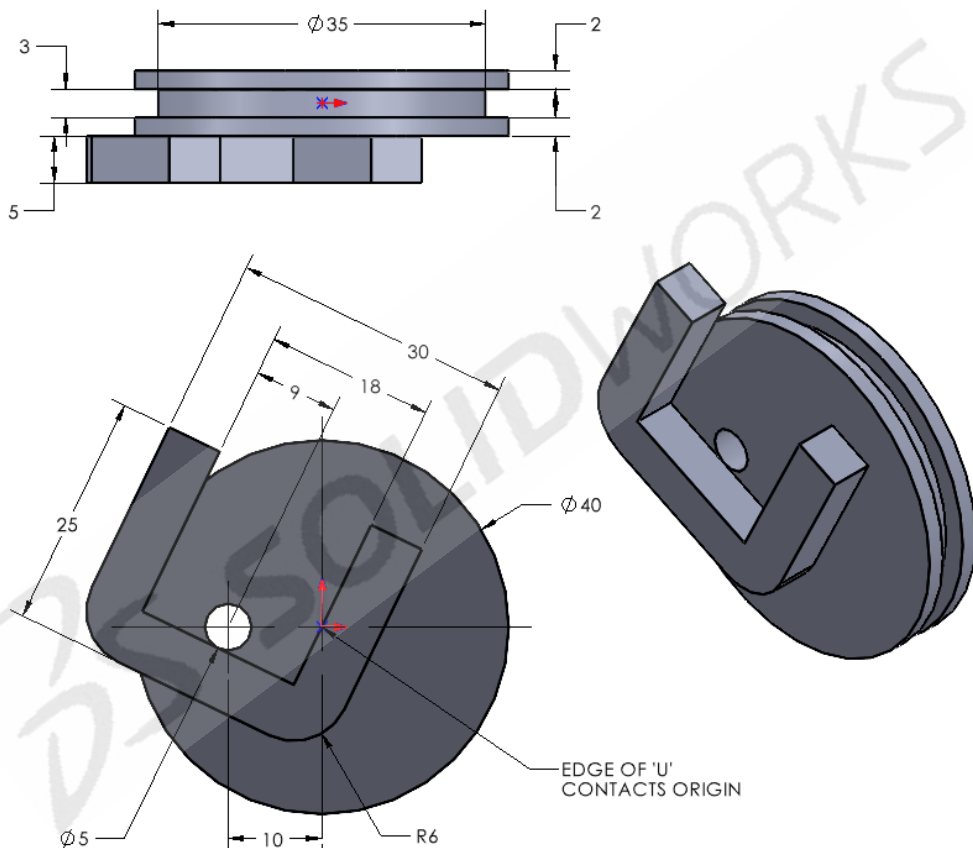
- Units: MMGS
- Difficulty Level: Medium
- Certification: CSWA
- Duration (min): 10
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is *asymmetric*.
  - All sketches are fully-defined.

## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines, Circles, Trim, Sketch Fillets, Offset Entities
- Features: Revolves, Extrude Boss, Extrude Cut

HINT: The "U" boss is tangent to the through hole and passes through the Origin.

Volume: 9738 mm<sup>3</sup>





# Practice Problem 6.9

## Revolve Boss/Cut (Level 6)

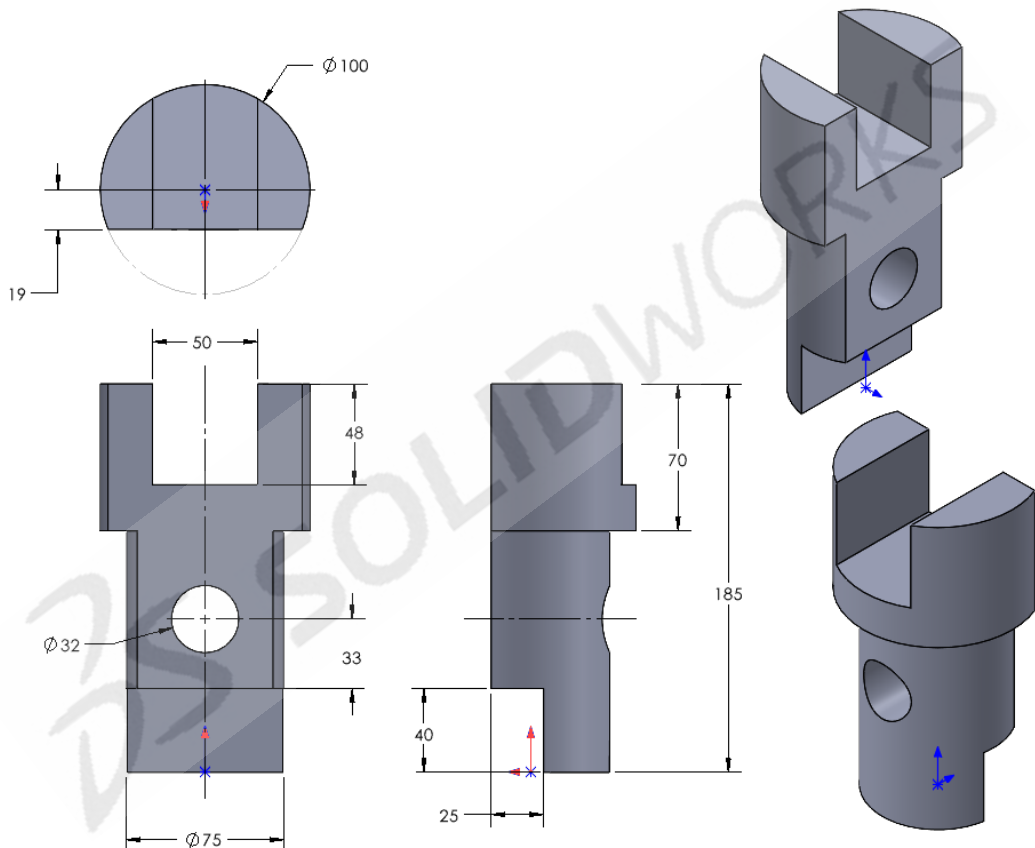
- Units: MMGS
- Difficulty Level: Easy
- Certification: CSWA
- Duration (min): 10
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully-defined.

## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines, Circles, Trim
- Features: Revolves, Extrude Cut

HINT: Start with a full revolve feature.

Volume: 537697 mm<sup>3</sup>



# Practice Problem 6.10

## Revolve Boss/Cut (Level 6)

- Units: MMGS
- Difficulty Level: Medium
- Certification: CSWA
- Duration (min): 10
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully-defined.

## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines, Circles, Trim, Arcs
- Features: Revolves, Extrude Boss, Extrude Cut

HINT: Bosses then cuts.

Volume: 532863 mm<sup>3</sup>

