

# Practice Problem 10.1

## Exam Level (Level 10)

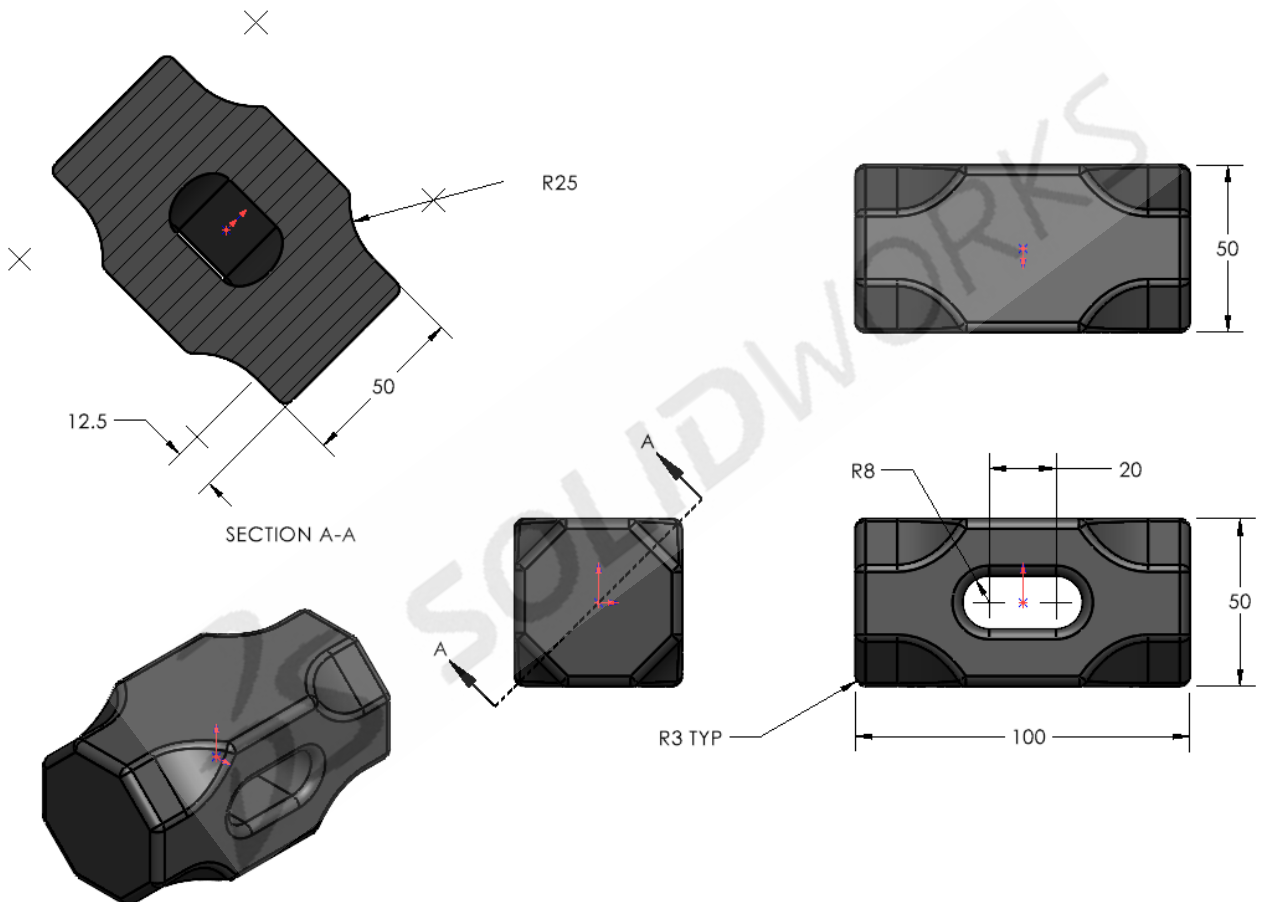
- Units: MMGS
- Difficulty Level: Easy
- Certification: CSWA
- Duration (min): 10
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully defined.

## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines, Circles, Slots
- Features: Extrude Boss, Extrude Cut, Fillets and Chamfers
- Reference Geometry: Planes

HINT: Use a Slot for the center cut.

Volume: 202594 mm<sup>3</sup>



# Practice Problem 10.2

## Exam Level (Level 10)

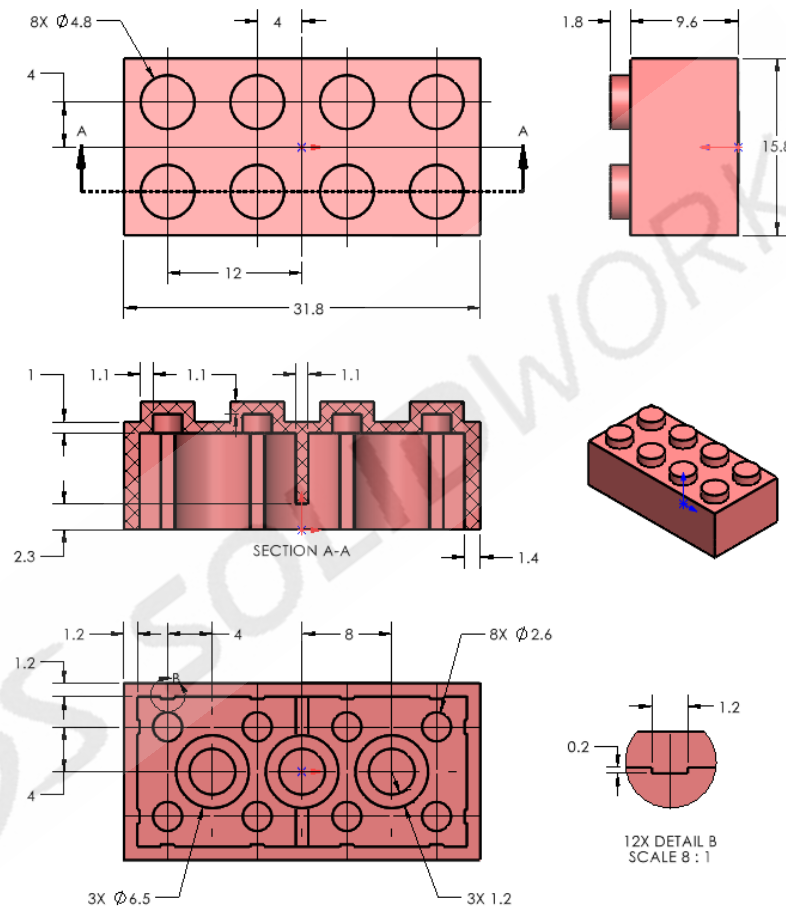
- Units: MMGS
- Difficulty Level: Medium
- Certification: CSWA
- Duration (min): 30
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully defined.

## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines, Circles, Rectangles
- Features: Extrude Boss

HINT: Use an extruded thin feature.

Volume: 2212 mm<sup>3</sup>



# Practice Problem 10.3

## • Exam Level (Level 10)

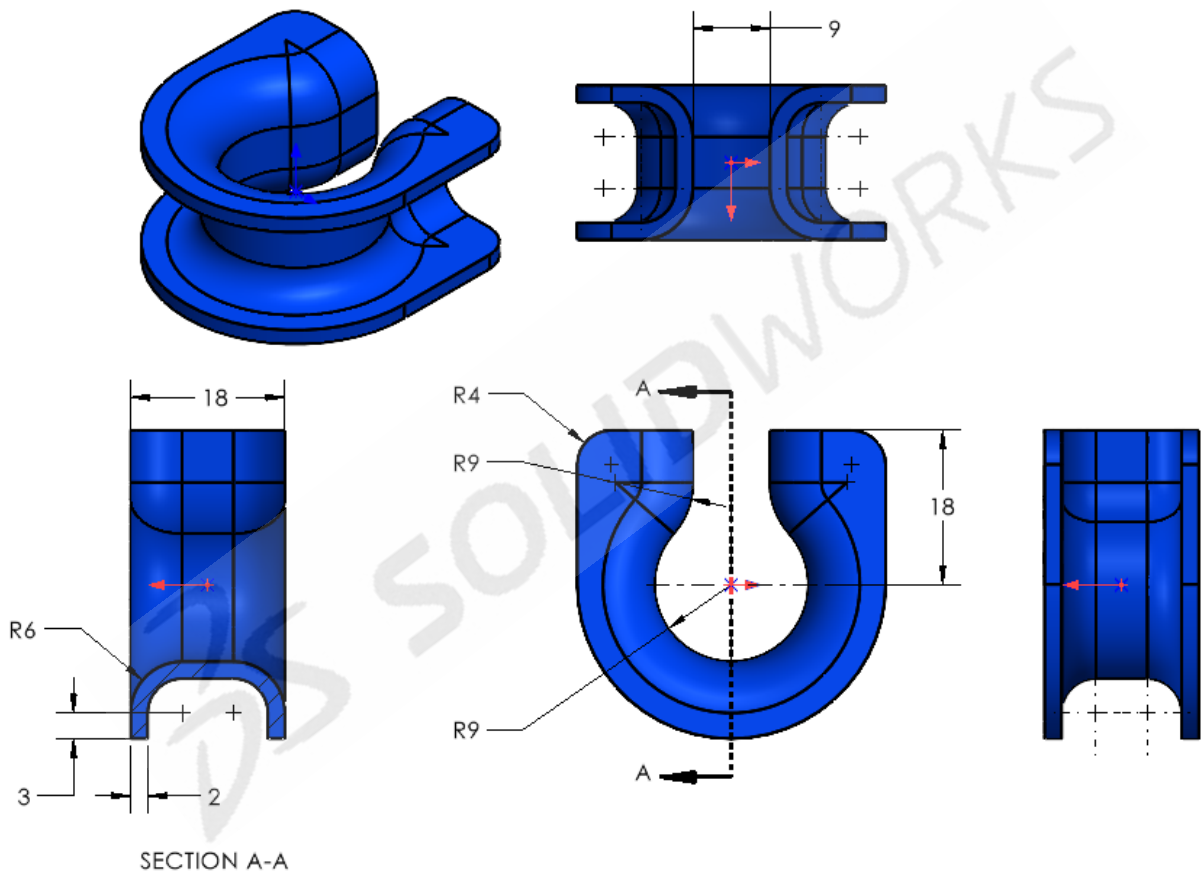
- Units: MMGS
- Difficulty Level: Easy
- Certification: CSWA
- Duration (min): 10
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully defined.

## Suggested Sketch Tools / Features

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

HINT: Use an Up to Surface end condition.

Volume: 4605 mm<sup>3</sup>



# Practice Problem 10.4

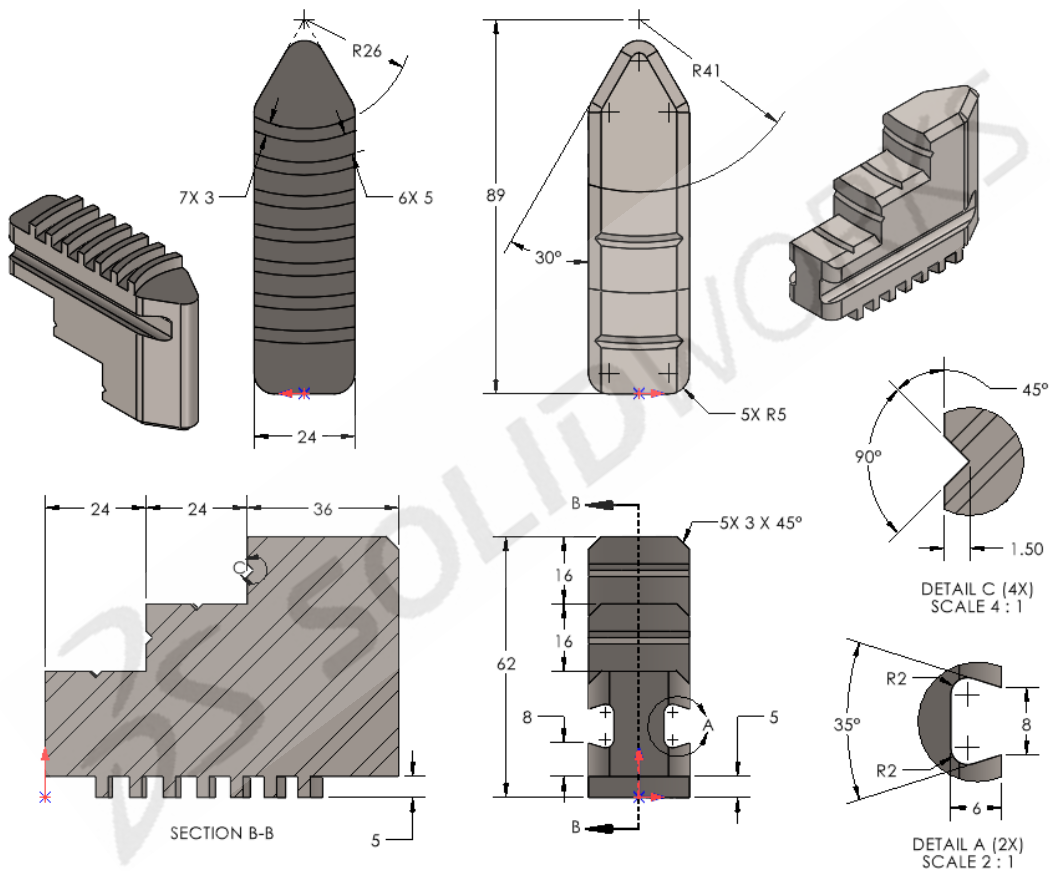
## Exam Level (Level 10)

- Units: MMGS
- Difficulty Level: Medium
- Certification: CSWA
- Duration (min): 25
- 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, Rectangles
- Features: Extrude Boss, Extrude Cut, Fillets and Chamfers, Revolves

Volume: 71721 mm<sup>3</sup>



# Practice Problem 10.5A

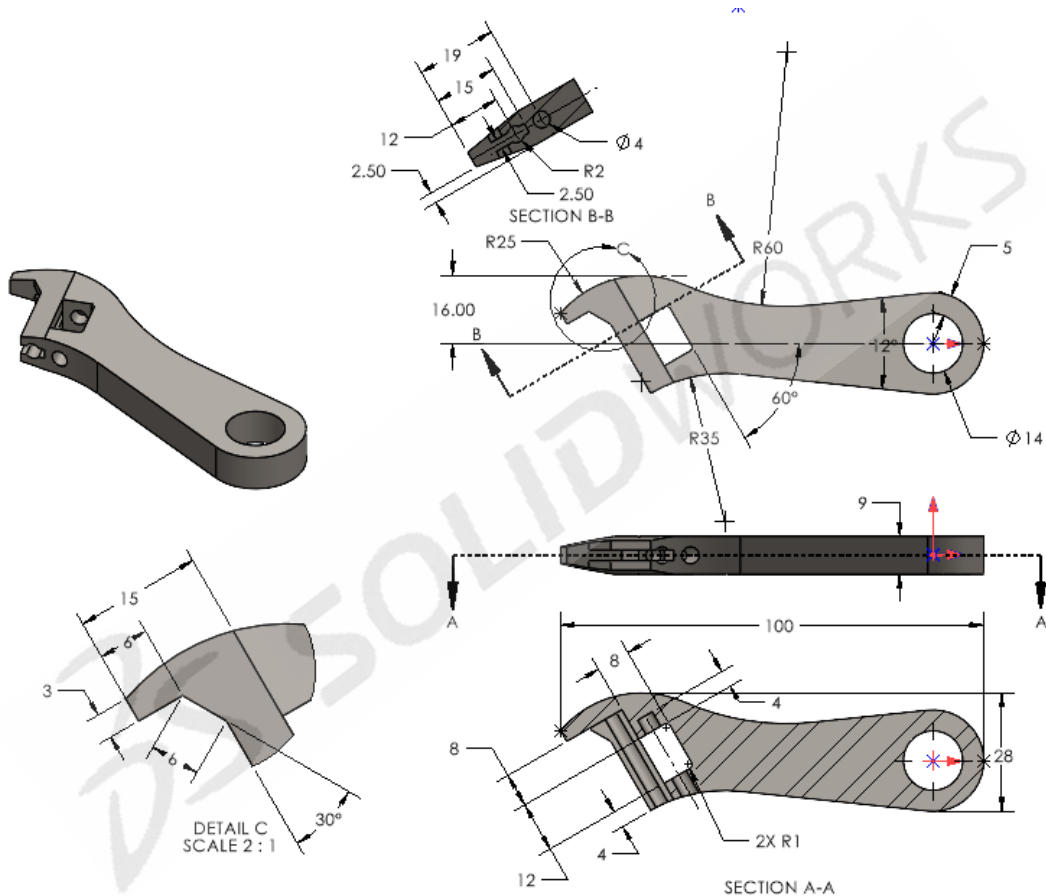
## Exam Level (Level 10)

- Units: MMGS
- Difficulty Level: Hard
- Certification: CSWA
- Duration (min): 35
- 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: Extrude Boss, Extrude Cut

Volume: 13267 mm<sup>3</sup>



# Practice Problem 10.5B

## Exam Level (Level 10)

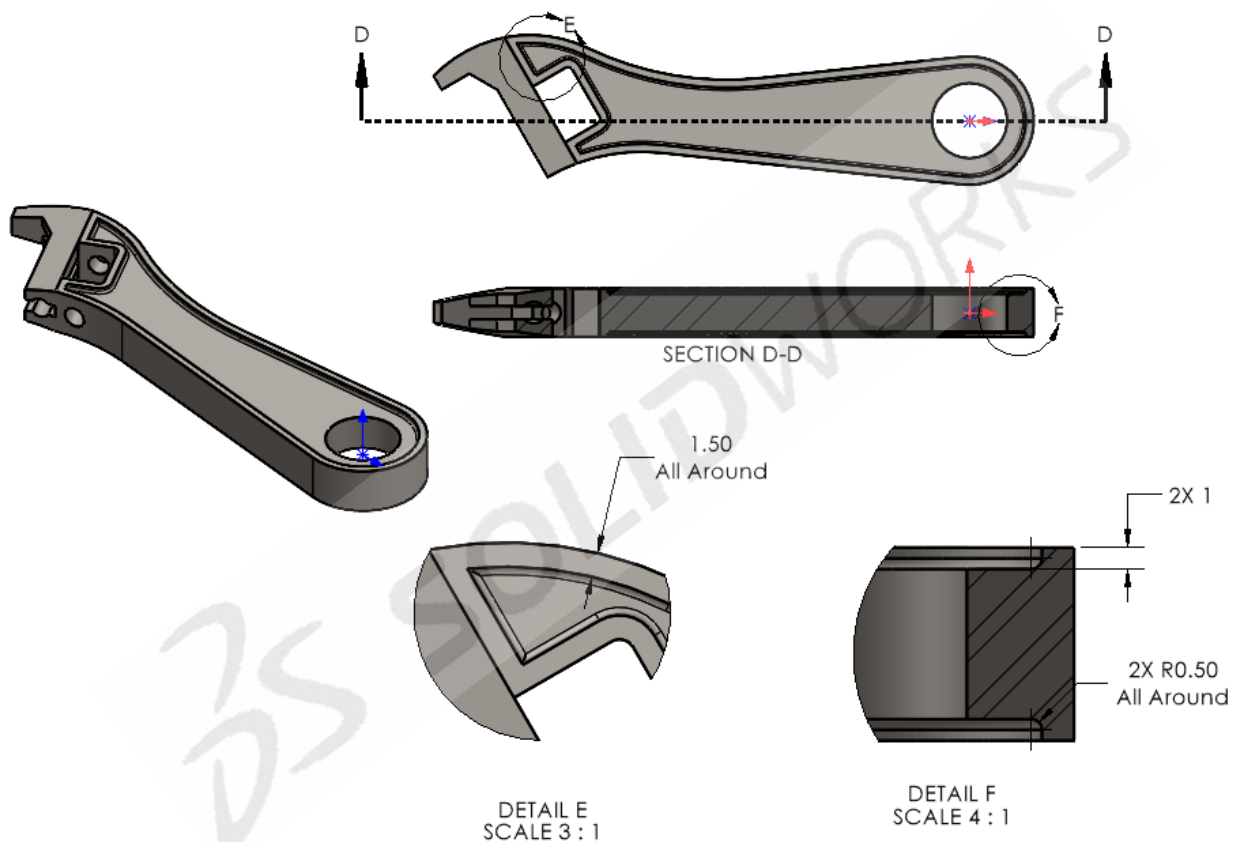
- Units: MMGS
- Difficulty Level: Easy
- Certification: CSWA
- Duration (min): 5
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully defined.

## Suggested Sketch Tools / Features

- Sketch: Lines, Centerlines, Circles, Offset Entities
- Features: Extrude Boss, Extrude Cut
- Patterns: Mirror

HINT: Start with the 10.5A part.

Volume: 12026 mm<sup>3</sup>



# Practice Problem 10.6

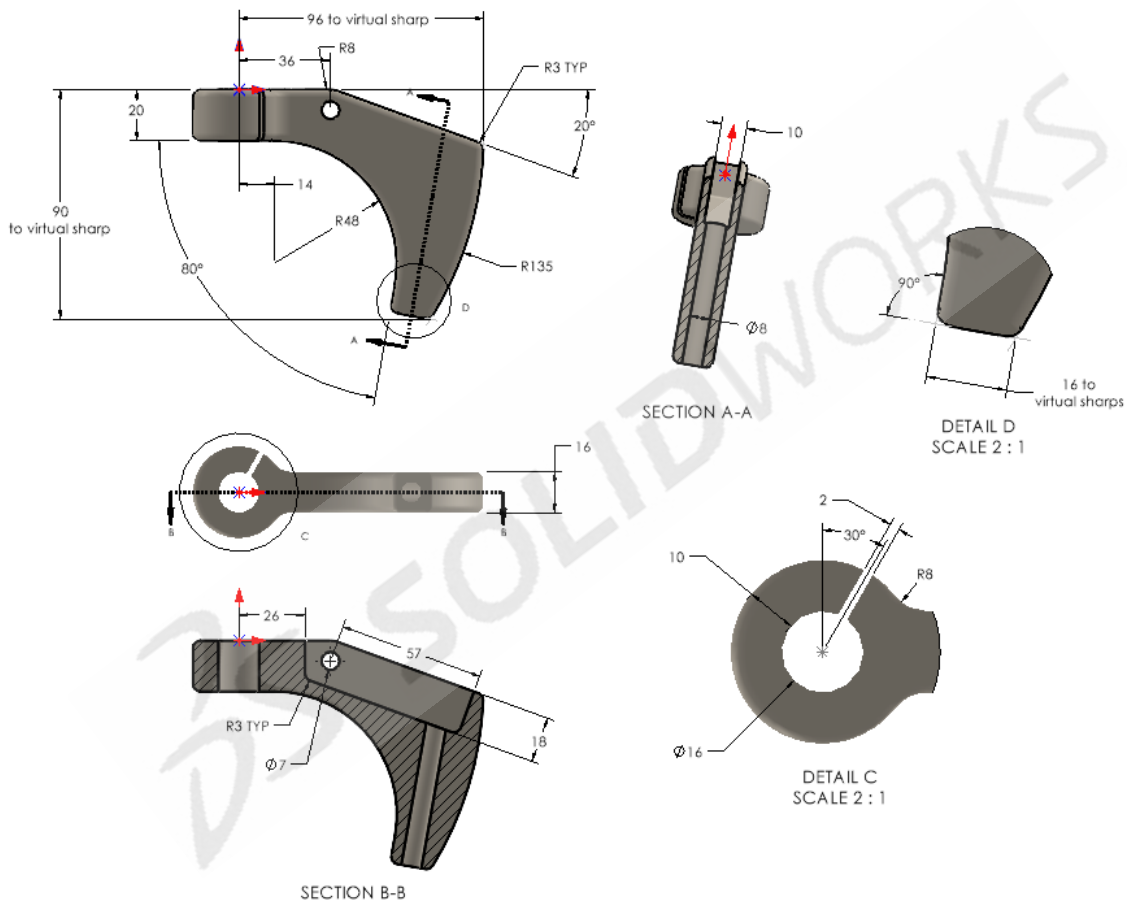
## Exam Level (Level 10)

- Units: MMGS
- Difficulty Level: Hard
- Certification: CSWA
- Duration (min): 40
- 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, Sketch Fillets
- Features: Extrude Boss, Extrude Cut, Fillets and Chamfers

Volume: 53246 mm<sup>3</sup>





# Practice Problem 10.7A

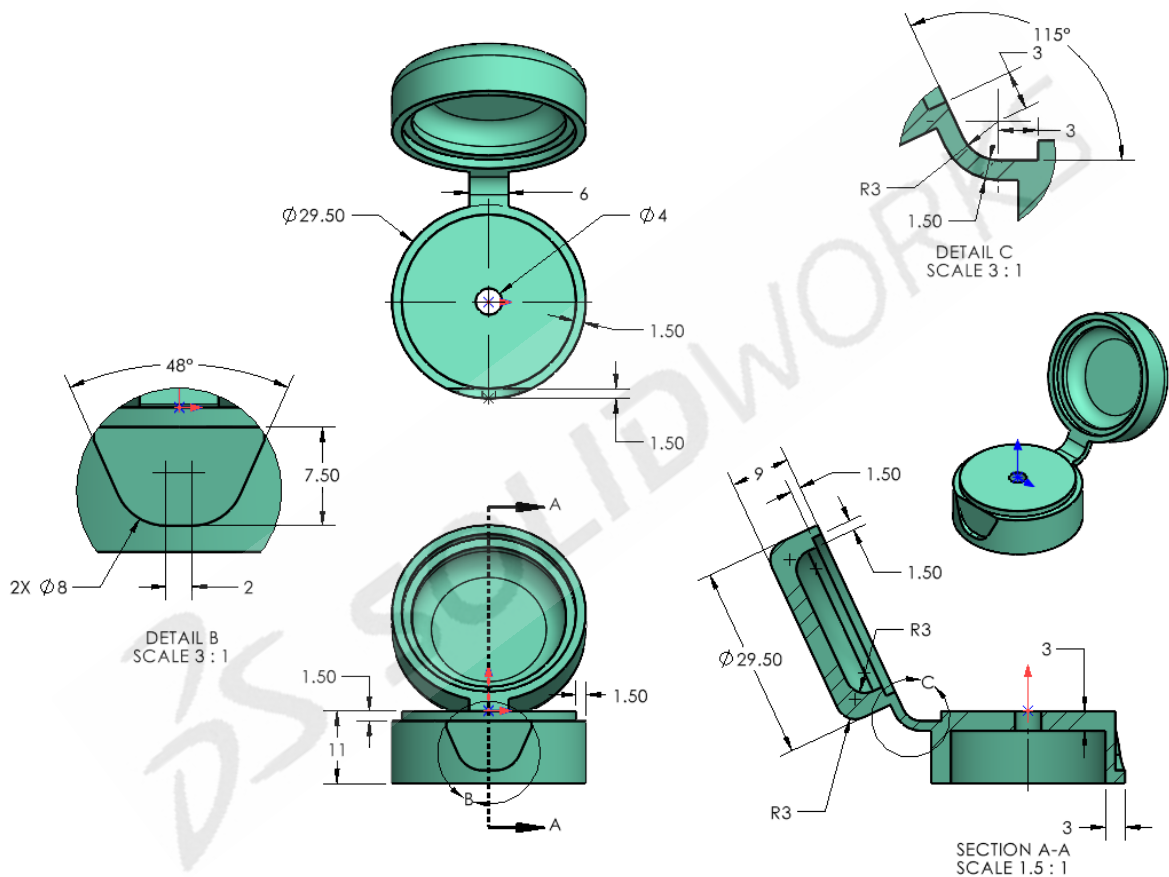
## Exam Level (Level 10)

- Units: MMGS
- Difficulty Level: Medium
- Certification: CSWA
- Duration (min): 25
- 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: Extrude Boss, Extrude Cut, Revolves, Fillets and Chamfers
- Reference Geometry: Planes

Volume: 7128 mm<sup>3</sup>





# Practice Problem 10.7B

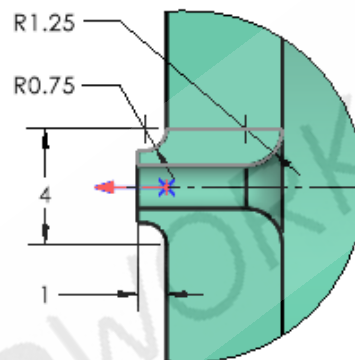
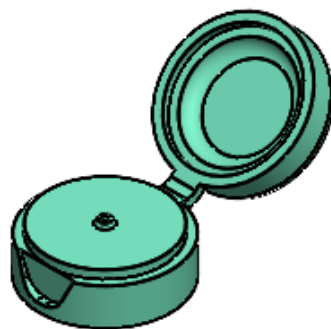
- **Exam Level (Level 10)**
- Units: MMGS
- Difficulty Level: Medium
- Certification: CSWA
- Duration (min): 15
- Design Intent:
  - The part's origin location is indicated in red.
  - The part is symmetric.
  - All sketches are fully defined.

## Suggested Sketch Tools / Features

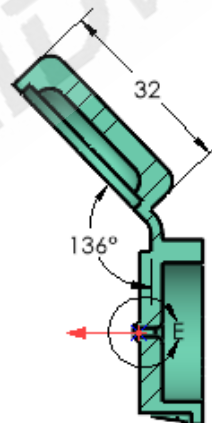
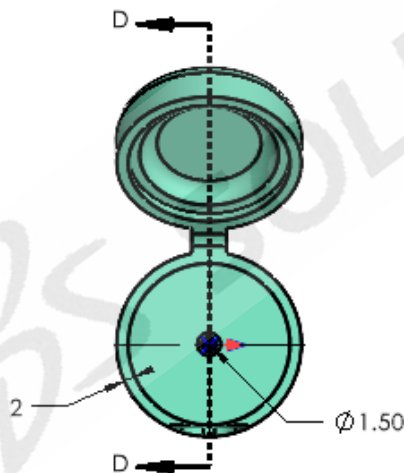
- Sketch: Lines, Centerlines
- Features: Revolves

HINT: Start with the 10.7A part.

Volume: 9844 mm<sup>3</sup>



DETAIL E  
SCALE 5 : 1



SECTION D-D

# Practice Problem 10.7C

- **Exam Level (Level 10)**
- 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

HINT: Start with the 9.7B part.

Volume: 4917 mm<sup>3</sup>

