

ENGINEERING DESIGN AND GRAPHICS WITH **SOLIDWORKS®** **2023**



JAMES D. BETHUNE
NATHAN BROWN

Engineering Design and Graphics with SolidWorks® 2023

***James D. Bethune
Nathan Brown***

Figure P3-37
MILLIMETERS

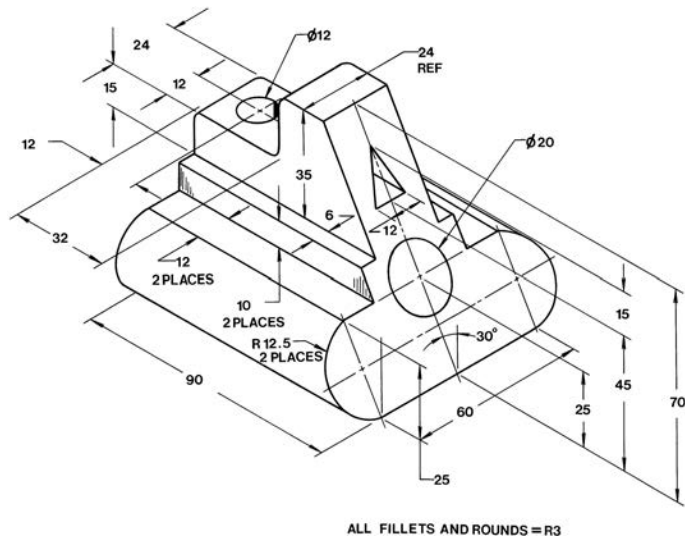


Figure P3-38
MILLIMETERS

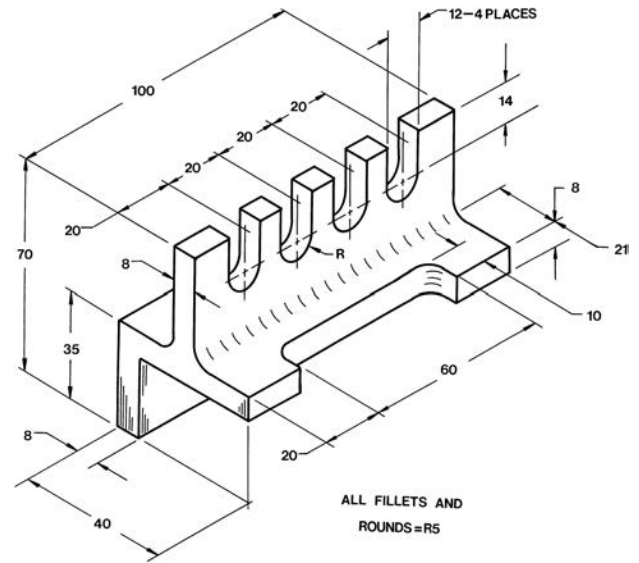


Figure P3-39
MILLIMETERS (CONSIDER A SHELL)

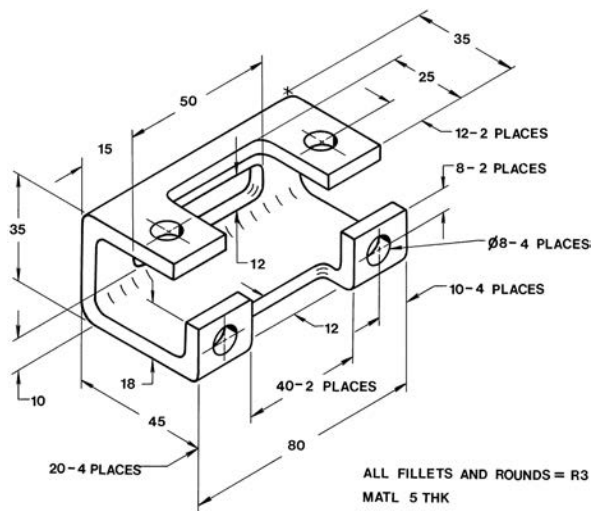


Figure P3-40
MILLIMETERS

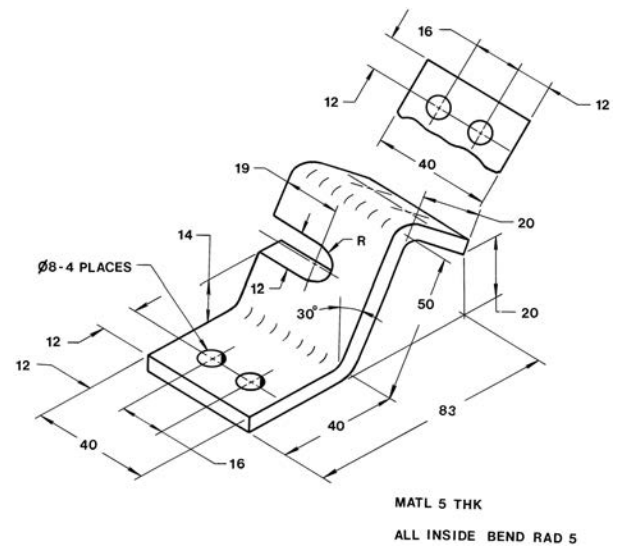


Figure P3-41
MILLIMETERS

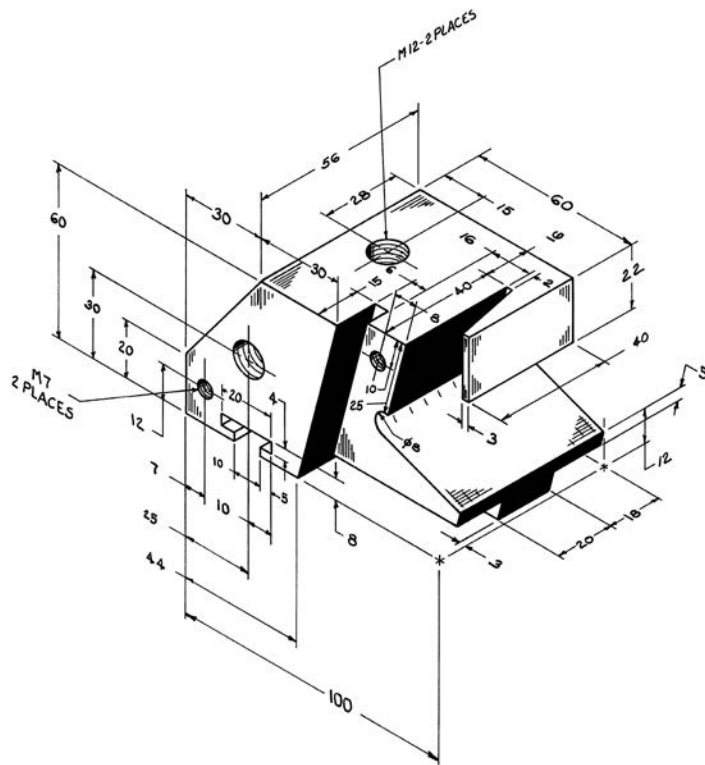


Figure P3-42
INCHES

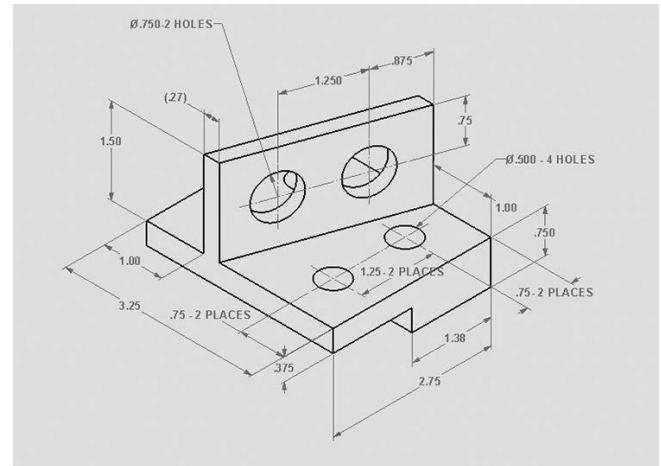


Figure P3-43
MILLIMETERS

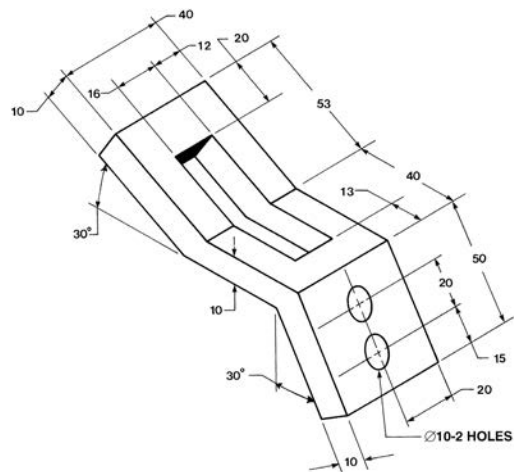
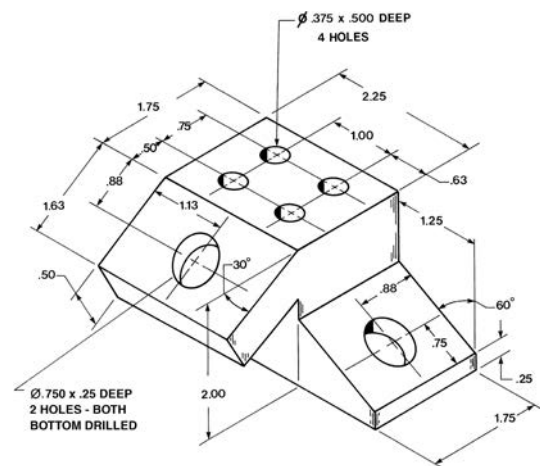


Figure P3-44
INCHES



[illegible]

Technical drawing of a square plate with a central hole and four corner holes. The plate has a side length of 75 mm. The central hole has a diameter of 30 mm. There are four corner holes, each with a diameter of 20 mm. The distance from the center of the plate to the center of each corner hole is 35 mm. The plate has a thickness of 8 mm. The corners are rounded with a radius of R12. The drawing shows the top view and a perspective view. Dimensions are given in mm.

Key dimensions and features:

- Side length: 75 mm (BOTH SIDES)
- Central hole diameter: $\phi 30$
- Corner hole diameter: $\phi 20$ HOLES
- Distance from center to corner hole center: 35 mm
- Plate thickness: 8 mm
- Corner radius: R12
- Angle: 240°
- Bottom hole diameter: $\phi 25$ - 2 PLACES

[illegible][illegible]

Project 3-2:

- A. Draw the following spring.
- Diameter = 2.00
- Wire diameter = .125
- Pitch = .375
- Revolutions = 16
- B. Grind both ends to create a spring 2.00 long in its unloaded position.

Project 3-3:

- A. Draw the following spring.
- Diameter = 25
- Wire diameter = 5×5 square
- Pitch = 6
- Revolutions = 8

Figure P3-49
INCHES (Project 3-2)

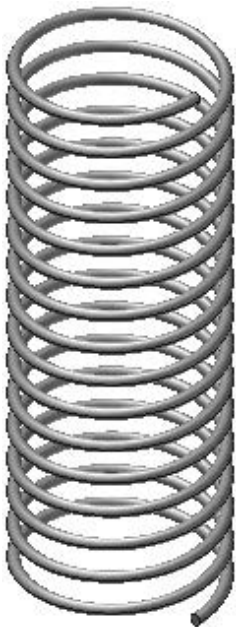


Figure P3-50
MILLIMETERS (Project 3-3)

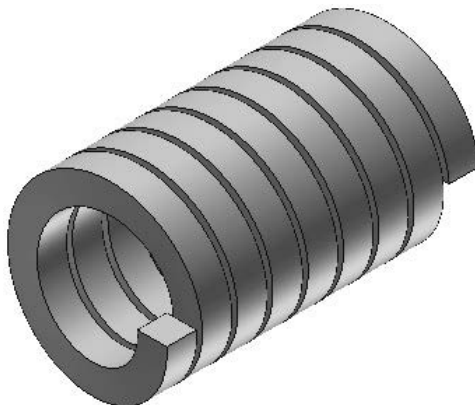
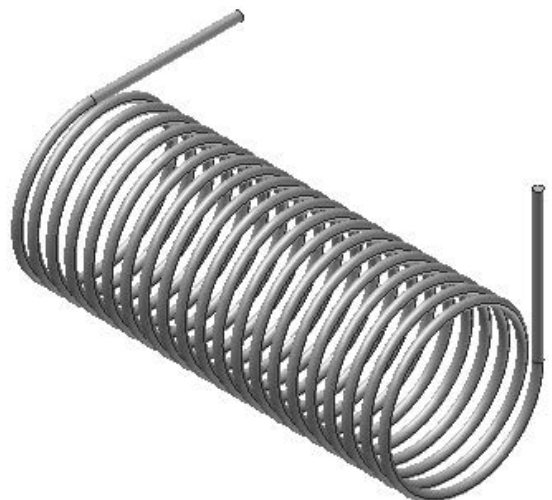


Figure P3-51
INCHES (Project 3-4)



Project 3-4:

- A. Draw the following torsional spring.
- Diameter = .500
- Wire diameter = .06
- Pitch = .125
- Revolutions = 20
- Extension lengths = 1.00, 90° apart

Project 3-5:

- A. Draw the following torsional spring.
- Diameter = 12.00
- Wire diameter = 4.0
- Pitch = 6.0
- Revolutions = 18
- Extension lengths = 15, 180° apart

Figure P3-52
MILLIMETERS

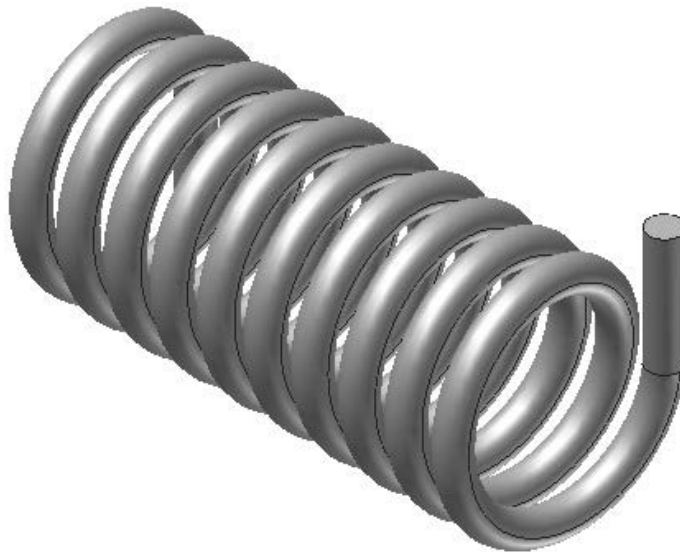
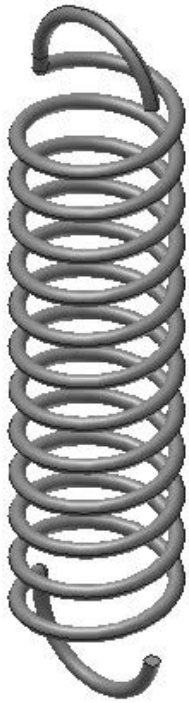


Figure P3-53
INCHES



Project 3-6:

- A. Draw the following extension spring.

Diameter = 1.00

Wire diameter = .0938

Pitch = .180

Revolutions = 12

Extension radius = .125

Hook radius = .50

Project 3-7:

- A. Draw the following extension spring.

Diameter = 30

Wire diameter = 6

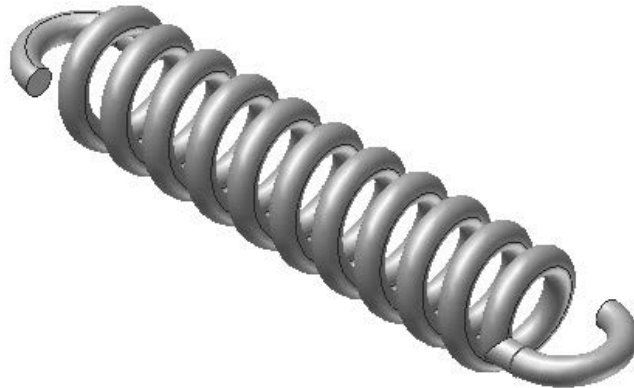
Pitch = 30

Revolutions = 10

Extension radius = 6

Hook radius = 12

Figure P3-54
MILLIMETERS



Project 3-8:

Draw a $\text{Ø}4.00 \times 3.00$ cylinder and deboss on one of the following. Use a font style and size of your choice, or as assigned by your instructor.

- A. Your name and address
- B. Your school's name and address