

Mass Properties

Lab 2 - Part 1

Options...

Override Mass Properties... Recalculate

☒ Include hidden bodies/components
☐ Create Center of Mass feature
☐ Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of Lab 2 - Part 1
Configuration: Default
Coordinate system: -- default --

Density = 0.04 pounds per cubic inch

Mass = 0.40 pounds

Volume = 11.17 cubic inches

Surface area = 68.80 square inches

Center of mass: (inches)
X = -2.46
Y = -0.37
Z = -0.32

Principal axes of inertia and principal moments of inertia: (pounds * square inches)
Taken at the center of mass.
I_x = (1.00, 0.00, 0.03) P_x = 0.75
I_y = (0.00, 1.00, 0.00) P_y = 1.85
I_z = (-0.03, 0.00, 1.00) P_z = 1.87

Moments of inertia: (pounds * square inches)
Taken at the center of mass and aligned with the output coordinate system. (Using positive tensor notation.)
I_{xx} = 0.75 I_{xy} = 0.00 I_{xz} = 0.03
I_{yx} = 0.00 I_{yy} = 1.85 I_{yz} = 0.00
I_{zx} = 0.03 I_{zy} = 0.00 I_{zz} = 1.87

Moments of inertia: (pounds * square inches)
Taken at the output coordinate system. (Using positive tensor notation.)
I_{xx} = 0.84 I_{xy} = 0.37 I_{xz} = 0.34
I_{yx} = 0.37 I_{yy} = 4.34 I_{yz} = 0.05
I_{zx} = 0.34 I_{zy} = 0.05 I_{zz} = 4.37

Help Print... Copy to Clipboard

SOLIDWORKS

Lab 2 - Part 1

Sketch Line Corner Rectangle Circle Polygon Centerpoint Arc Spline Smart Dimension Add Relation Sketch Fillet Trim Entities Linear Sketch Pattern Offset Convert Mirror Mirror Entities Extruded Boss/Base Extruded Cut Fillet Linear Pattern Mirror Draft Shell Reference Geometry Measure Mass Properties

Basic Modeling Tools SOLIDWORKS CAM SOLIDWORKS CAM TBM Simulation Analysis Preparation

Lab 2 - Part 1

- Solid Bodies(1)
- Equations
- Material <not specified>
- Front Plane
- Top Plane
- Right Plane
- Origin
- Boss-Extrude1
- Sketch1
- Cut-Extrude1
- Cut-Extrude2
- Mirror1

The image shows a 3D model of a mechanical part, likely a bracket or support, rendered in a light blue color. The part has a complex shape with multiple vertical supports and a central horizontal section. A coordinate system (X, Y, Z) is visible on the part, with the Z-axis pointing upwards. The background is a light gray, and the overall interface is the SolidWorks Student Edition.

Page: 1/3 Section: 1/1 Row: 7 Column: 4 Words: 210

SOLIDWORKS Student Edition - Academic Use Only Editing Part Simplified Interface IPS

lab 2 - part 2

Options...

Override Mass Properties... Recalculate

☒ Include hidden bodies/components
☐ Create Center of Mass feature
☐ Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of lab 2 - part 2
Configuration: Default
Coordinate system: -- default --

Density = 0.04 pounds per cubic inch

Mass = 0.33 pounds

Volume = 9.05 cubic inches

Surface area = 32.64 square inches

Center of mass: (inches)
X = -1.94
Y = -0.80
Z = 0.74

Principal axes of inertia and principal moments of inertia: (pounds * square inches)
Taken at the center of mass.

| | |
|-----------------------------|-----------|
| Ix = (0.99, 0.11, 0.11) | Px = 0.16 |
| Iy = (-0.15, 0.79, 0.60) | Py = 0.41 |
| Iz = (-0.02, -0.61, 0.79) | Pz = 0.46 |

Moments of inertia: (pounds * square inches)
Taken at the center of mass and aligned with the output coordinate system. (Using positive tensor notation.)

| | | |
|------------|------------|------------|
| Lxx = 0.17 | Lxy = 0.03 | Lxz = 0.03 |
| Lyx = 0.03 | Lyx = 0.43 | Lyz = 0.03 |
| Lzx = 0.03 | Lzy = 0.03 | Lzz = 0.44 |

Moments of inertia: (pounds * square inches)
Taken at the output coordinate system. (Using positive tensor notation.)

| | | |
|-------------|-------------|-------------|
| Ixx = 0.56 | Ixy = 0.54 | Ixz = -0.44 |
| Iyx = 0.54 | Iyy = 1.84 | Iyz = -0.17 |
| Izx = -0.44 | Izy = -0.17 | Izz = 1.88 |

Help Print... Copy to Clipboard

lab 2 - part 2

part 2

bodies(1)

ns

l <not specified

ane

ne

ane

trude1

ch1

rude1

rude2

rude3

object model as

model of the roller shown below. The thickness of the web is .25 inch.

a. Use the Pattern command to create the 6 holes. Print out an isometric view of the model.

s window showing the volume in the correct units.

Page: 1/3 Section: 1/1 Row: 18 Column: 2 Words: 210

SOLIDWORKS Student Edition - Academic Use Only

Editing Part Simplified Interface IPS

Mass Properties

lab 2 part 3

Options...

Override Mass Properties...Recalculate

☒ Include hidden bodies/components

☐ Create Center of Mass feature

☐ Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of lab 2 part 3

Configuration: Default

Coordinate system: -- default --

Density = 0.04 pounds per cubic inch

Mass = 0.23 pounds

Volume = 6.29 cubic inches

Surface area = 56.81 square inches

Center of mass: (inches)

X = 0.00

Y = 0.00

Z = 0.00

Principal axes of inertia and principal moments of inertia: (pounds * square inches)

Taken at the center of mass.

lx = (0.00, 1.00, 0.00)Px = 0.28

ly = (0.00, 0.00, 1.00)Py = 0.28

lz = (1.00, 0.00, 0.00)Pz = 0.52

Moments of inertia: (pounds * square inches)

Taken at the center of mass and aligned with the output coordinate system. (Using positive tensor notation.)

Lxx = 0.52Lxy = 0.00Lxz = 0.00

Lyx = 0.00Lyy = 0.28Lyz = 0.00

Lzx = 0.00Lzy = 0.00Lzz = 0.28

Moments of inertia: (pounds * square inches)

Taken at the output coordinate system. (Using positive tensor notation.)

lxx = 0.52lxy = 0.00lxz = 0.00

lyx = 0.00lyy = 0.28lyz = 0.00

lzx = 0.00lzy = 0.00lzz = 0.28

HelpPrint...Copy to Clipboard

SOLIDWORKS

File Edit View Insert Tools Simulation Window

Search

Sketch Line Corner Rectangle Circle Polygon Centerpoint Arc Spline Smart Dimension Add Relation Sketch Fillet Trim Entities Linear Sketch Pattern Offset Entities Convert Entities Mirror Extruded Boss/Base Extruded Cut Fillet Linear Pattern Mirror Draft Shell Reference Geometry Measure Mass Properties

Basic Modeling ToolsSOLIDWORKS CAMSOLIDWORKS CAM TBMSimulationAnalysis Preparation

lab 2 part 3

Solid Bodies(1)

Equations

Material <not specified>

Front Plane

Top Plane

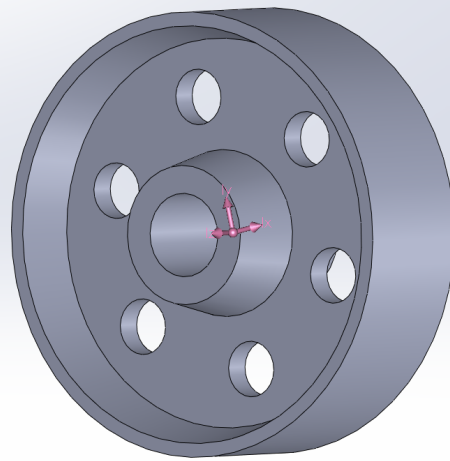
Right Plane

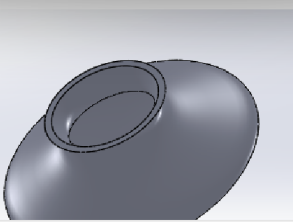
Origin

Revolve1

Cut-Extrude1

Mirror1





Page: 1/3 Section: 1/1 Row: 1 Column: 1 Words: 210

SOLIDWORKS Student Edition - Academic Use Only

Editing Part Simplified Interface IPS

