

Plane Geometry and Solid Figures (Part 2)



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Objectives

- Right Prisms
- Cylinders

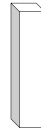
****Note:** The algebra activity square stock, rectangular bar, and round stock is needed as well as combination squares.

Right Prisms

- ▶ A three-dimensional shape with two parallel surfaces that are polygons and with sides that create 90° angles
- ▶ See geometry formula sheet
- ▶ Total surface area – areas of all surfaces (bases and lateral faces); two-dimensional calculation
- ▶ Lateral surface area – areas of all surfaces besides the bases (only lateral faces); two-dimensional calculation
- ▶ Volume – amount of space the shape fills; three-dimensional calculation

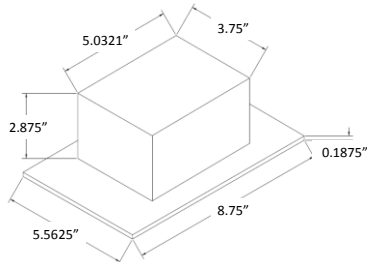
Right Prism

- ▶ Example: Find the lateral surface area (as it is shown below), total surface area, and volume of the rectangular bar from the algebra activity.



Right Prism

- ▶ Example: Find the volume and total surface area of the following figure



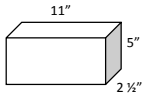
Try Yourself

- ▶ Find the lateral surface area (as it is shown below), total surface area, and volume of the square stock from the algebra activity.



Try Yourself

- Find the weight of the block shown if it is made of steel and steel weighs 0.283 lbs/cu in



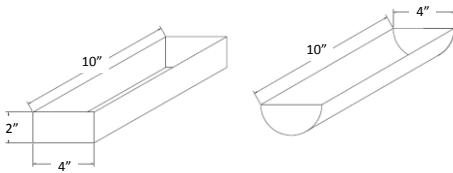
Right Cylinders

- Similar to a Right Prism, but the base is a circle
- Example: Find the lateral surface area, total surface area, and volume of the cylinder of the 1" diameter round stock from the algebra activity.



Right Cylinder

- Which type of container holds more volume? By how much?



Right Cylinders

- A piece of steel piping has an outer diameter of 1½" and inner diameter of 1". How much would a piece of the piping weigh if it is 30" long and steel weighs 0.283 lbs/cu in.

Try Yourself

- Find the lateral surface area, total surface area, and volume of the cylinder of the $\frac{1}{2}$ " diameter round stock from the algebra activity.



Try Yourself

- Find the volume of the following piece. All parts are 0.5" thick. All dimensions are in inches. Hint: There is a missing dimension.

