

NAME: _____

P.I. G.G.14: Apply the properties of a cylinder, including volume equals the product of the area of the base and the altitude

P.I. G.G.15: Apply the properties of a right circular cone, including volume is one-third the product of the area of its base and its altitude

1. Select a can of food and measure its diameter and height. Find its volume.
2. Outline a plan for determining the thickness of a paper towel in a roll containing 80 towels if you know that each towel measures 11 in. by 9.3 in.
3. Which changes the volume of a cylinder more, doubling the radius or doubling the height? Justify your answer.
4. Explain how to find the radius of the base of a cone if you know its volume and height.

[1] Check students' work.

Find the volume of the towels by subtracting the volume of the tube from that of the towels. Then find the volume of each sheet in terms of h and the total volume of paper in terms of h . Then solve for h by

[2] equating the two figures you determined.

Doubling the radius; doubling the height gives new volume $2\pi r^2 h$ and doubling the radius gives

[3] $4\pi r^2 h$.

First, multiply the volume by 3. Then divide by π and by the height. Finally, take the square root of the result.

[4]