

Steve Milton and son Bryce hold up their Guinness World Record certificate.

Rubber Band Man



Circle in on the surface area and volume of spheres to check out the world's largest rubber band ball!

You might say Steve Milton of Eugene, Oregon, bounced his way into the *Guinness World Records* book! The 26-year-old set a new mark for the world's largest rubber band ball, snapping the previous record by more than 1,400 pounds. The massive elastic *sphere* was so heavy, four weightlifters were needed to push it onto a scale for the official weigh-in!

"It's just amazing," said Milton, describing his record-setting ball. "It's out of this world."

Starting with a handful of rubber bands, Milton began constructing the ball in the fall of 2005. With help from his son Bryce, 6, and friend Austin Johnson, 7, he added to the sphere every day for a year until it grew to a whopping $5\frac{1}{2}$ feet tall and 4,594 pounds. In all, Milton used more than 175,000 rubber bands.

"Steve can have the record," said previous rubber band ball champion John Bain, of Wilmington, Delaware. "He worked hard for it."

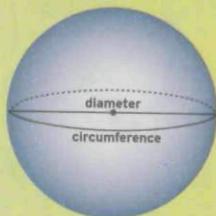
Geometrically speaking, how does Milton's rubber band ball compare with Bain's? Work with circumference, surface area, and volume to find out. When you roll through our questions, you'll have a ball!

—by Bill Wise

WHAT TO DO

Read "Sphere Formulas" below. Use that information and the "Rubber Band Rundown" to answer the questions. If allowed, use a calculator. Round answers to the nearest hundredth.

SPHERE FORMULAS



- ✓ Circumference of a sphere is the distance around it. (Picture the circle formed by cutting a sphere in half.)
- ✓ The diameter is a straight line segment joining two points on the surface, and passing through the sphere's center.
- ✓ The radius is a straight line segment from any point on the surface to the sphere's center. It is half the diameter.
- ✓ Use 3.14 for π .
- ✓ Circumference = $\pi \times \text{diameter}$
- ✓ Surface Area (amount of space on the outside surface of the sphere, in square units) = $4 \times \pi \times \text{radius} \times \text{radius} = 4\pi r^2$
- ✓ Volume (cubic units) = $\frac{4}{3} \times \pi \times \text{radius} \times \text{radius} \times \text{radius} = \frac{4}{3}\pi r^3$

RUBBER BAND RUNDOWN

	MILTON'S RUBBER BAND BALL	BAIN'S RUBBER BAND BALL
HEIGHT (DIAMETER)	5.5 feet	5 feet
WEIGHT	4,594 pounds	3,120 pounds



1 What is the circumference of...

a. Bain's rubber band ball?

.....

b. Milton's rubber band ball?

.....

2 What is the surface area of...

a. Bain's rubber band ball?

.....

b. Milton's rubber band ball?

.....

3 What is the volume (amount of space inside sphere) of...

a. Bain's rubber band ball?

.....

b. Milton's rubber band ball?

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