



JETS Challenge 112

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The Verrazano Bridge towers are so tall...how tall are they?

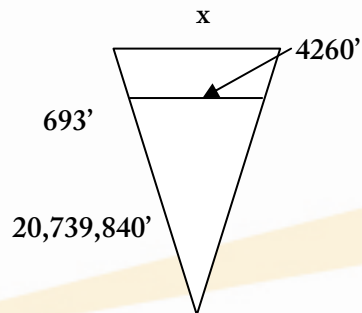
The Verrazano Bridge towers are so tall (693ft!!!) that due to the curvature of the earth the tops are measurably farther apart than the bottom although 'perfectly' vertical. The Verrazano Bridge, near New York City is the longest suspension bridge in the US at 4260ft between the towers.

The Challenge: If the diameter of the earth is taken as 7856 miles, how much further apart are the tower tops from bottoms??

There are 5280 ft/mile.

The diameter of the earth in feet is = 7856 miles x 5280 ft/mile = 41,479,680 ft so

The radius of the earth = 20,739,840 ft



$$\frac{4260'}{20,739,840'} = \frac{x}{20,739,840' + 693'} = \frac{x}{20,740,533'}$$

$$x = 0.142' = 1.708''$$

ANSWER:

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JETS Challenge problems are generously provided by Dave Meredith, Associate Professor, Penn State University-Fayette