

1982

A Fable

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few minutes later as the moon once again reappears to our view.

These are four means of proving that the earth is round without satellite photographs. Can you or your class think of others?

Further Reading

Lightman, Alan, 1982. Is the earth round or flat? *Science* 82 3(2):24-26.

A Fable

A student once needed a cube of metal which had to have a mass of 83 grams. He knew the density of this metal was 8.67 g/cc, which told him the cube's volume. Believing that significant figures were invented just to make life in chemistry difficult and had no use in the practical world, he found the volume to be $83 \text{ g} / 8.67 \text{ g/cc} = 9.573 \text{ cc}$, and used a very big log table to find the cube root. He thus determined that the cube's edge would have to be 2.097 cm. He took his plans to the machine shop where his friend had the same kind of work done the year before. The foreman said, "Yes, we can make this according to your specifications — but it will be expensive."

"That's okay," replied the student. "It's important." He knew his friend had paid \$35.00 and he himself had been given \$50.00 out of the school's research budget to get the job done.

He returned the next day, expecting the job to be done. "Sorry," said the foreman. "We're still working on it. Try next week." Finally the day came, and our friend got his cube. It looked very, very smooth and shiny and beautiful in its velvet lined case. Seeing it, our hero had a premonition of disaster and became a bit nervous. But he summoned up enough courage to ask for the bill. "\$500.00 and cheap at the price. We had a terrific job getting it right — had to make three before we got one right."

"But — but — my friend paid only \$35.00 for the same thing!"

"No. He wanted a cube 2.1 cm on an edge, and your specification called for 2.097. We had yours roughed out to 2.1 that afternoon, but it was the precision grinding and lapping to get it down to 2.097 which took so long and cost the big money. The first one we made was 2.089 on one edge when we finished, so we had to scrap it. The second one was closer, but still not what you specified. That's why the three tries."

"Oh."

New Jersey Science Teachers Assn. Newsletter