18.330 Problem Set 5

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) To high accuracy, and yet also with a commendable economy of effort, find

- (a) at least the **volume** and
- (b) maybe also the surface area

of the pseudocube $x^4 + y^4 + z^4 = 1$, itself of course related closely to the thing from Problem 7.

The shoddy table on the right contains fairly gross typographic errors in <u>exactly two</u> of its digits. Find and repair them!



| x | f(x) | |
|---|-------|------|
| | | |
| l | 0.568 | 2921 |
| 2 | 555 | 9630 |
| 3 | 538 | 9725 |
| 4 | 520 | 1853 |
| 5 | 497 | 0941 |
| 6 | 470 | 8183 |
| 7 | 441 | 6014 |
| 8 | 409 | 7092 |
| 9 | 0,375 | 4275 |
| | | |

Calculate the <u>mean distance</u> between many pairs of points P and Q dropped at random and independently onto a circle of unit radius.

