PUZZLES

The Twenty-ninth
Sean Kelly
Brandon McPhail

Pyramid Scheme

Build the pyramids below by adding one letter to each row and anagramming. At each level, you must have formed a word. Proceed until you reach the word at the bottom of the pyramid. We have provided an example for you.

Even Kant could do this.

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RANT
TRAIN
RATING
TRADING
DRAFTING

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R E A D J U S T M E N T

Some sum

If the sum of three numbers is 1, the sum of their squares is 15, and the sum of their cubes is 3, what is the sum of their fourth powers?

Even Pythagoras could do this.

Physics 101 Homework

A hole is drilled through the center of Earth such that the atmosphere flows to the earth's center. What must the diameter of the hole be in order for essentially all of the earth's atmosphere to be in the hole?

Use the following assumptions:

1) The Earth is entirely solid and uniformly dense.
2) Do not forget that the pressure varies with distance from center of Earth.
3) Obviously, many unrealistic assumptions can be involved in this one. To simplify the problem and give a common ground for everyone, use standard physics problem assumptions and the following: Through the use of an elaborate climate control system, the inside of the hole is held at a habitable temperature of $300K$. The ideal gas law applies with gas constant such that: Pressure= Density$*$86100 N-m/kg (about right for air at $300K$). "Essentially" all of the atmosphere in the hole means the pressure at sea level is one-millionth of normal atmospheric pressure of 10^5 N/m^2 (it can't really reach zero).

Puzzle from www.ocf.berkeley.edu/~www.
Even Aristotle could do this.

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I N C O R P O R A T E

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F E A T H E R I N G

So what if Freud can do it??

Even Freud could do this.	Easy
Even Pythagoras could do this.	Not easy
Even Aristotle could do this.	More challenging
Even Kant could do this.	This is a hard problem.
Even Ray Mayer could do this.	Go ask him for help.

Think you know the answer?
For more info on these puzzles, go to
http://www.reed.edu/~mcphailb/quest/

Don't mind my loudmouth boyfriend

Questions? Blitz: **puzzles@reed.edu**