

I U P U I
MATH CLUB TEASER #17

March 27, 2009
(due April 3, 2009)

The adroit Professor Zerep is installing a laser calibrated, digital wireless 10.1 channel audio system to listen to some old Duran Duran tapes.

There are 11 identical wire tips near one end of the system, and the Professor needs to match these with the other ends of the same 11 wires, which come out from under the carpet in a different room.

To find out which wire end corresponds to which, the Professor can do two things:

- a) Short-circuit the wires at either spot by twisting any two ends together.
- b) Look for a closed circuit using a tester made with a battery and a bell. The bell rings when the battery is applied to two ends of a continuous, unbroken circuit.

The Professor sits down with pencil and paper and soon devises the most efficient possible method of labeling the wires.

What is this method?

The IUPUI Math Club invites everybody to submit solutions to its weekly recreational mathematics problem. Interested individuals and teams of up to four participants must submit a cover sheet (available at jagmath.usg.iupui.edu) together with their written solution. At the end of the semester, every IUPUI student that sent a correct solution will receive a certificate of merit. Prizes will be distributed among the IUPUI undergraduate teams that submit the most correct solutions.

Solutions are due one week after each problem is posted, and should be faxed to (317) 274-3460, dropped off in person at LD 270, or sent by campus or U.S. mail to:

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