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# PROBLEM OF THE WEEK

10/21/14 due NOON 11/3/14

CAN YOU GIVE US A SOLUTION?

Problem No. 8 (Fall 2014 Series)

A straight wire is bent in a right angle and fixed in place. Two identical beads which slide along the wire are at time zero at rest on the two legs of the wire at perhaps different distances from the vertex. The beads attract each other with equal positive force, directed on the line between them, which may vary smoothly with time. There are no other forces. Prove that the beads arrive at the vertex at the same time.

A panel in the Mathematics Department publishes a challenging problem once a week and invites college & pre-college students, faculty, and staff to submit solutions. The objective of this is to stimulate and cultivate interest in good mathematics, especially among younger students. Solutions are due within two weeks from the date of publication.

Solutions can be emailed only as a pdf attachment to: [sfchang@purdue.edu](mailto:sfchang@purdue.edu). Solutions can also be faxed to 765-496-3177 or sent by campus or U.S. mail to:

PROBLEM OF THE WEEK, **6th Floor**, Math Sciences Bldg., Purdue Univ.,  
150 North University St., West Lafayette, IN 47907-2067

Please include your name, address and **status at your university or school** on your problem solutions.

The names of those who submitted correct solutions will be posted on the Problem of the Week website and in the Math. Library, along with the best solution. Every Purdue student who submits three or more correct solutions will receive a Certificate of Merit. A prize fund of \$300.00 will be distributed among those Purdue undergraduates who have contributed at least six correct solutions for the thirteen problems in the Fall 2014 series.