

# Physics Challenges for Teachers and Students

*A Worldwide Problem-Solving Contest*



## ► When Push Comes to Shove (F2)

A block is given a quick push along a horizontal table. The coefficient of kinetic friction between the block and the table is  $\mu_k$ . It is known that during the time interval  $t$  (immediately after the push) the block covers a distance  $d$ . Find the distance that may be covered by the block during the subsequent time interval  $t'$ . Find all possible answers.

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### Submission Guidelines:

The deadline for submitting solutions to this problem is Feb. 21, 2005.

- only email submissions will be considered;
- email your solutions to Boris Korsunsky at [korsunbo@post.harvard.edu](mailto:korsunbo@post.harvard.edu);
- please email the solutions as Word files;
- please email *each solution* as a separate file;
- note that each problem, in addition to a very clever title, has a code such as F2. Please name each file as “problem code-first initial-last name.” For instance, “F2DVader” if your name is Darth Vader and you are sending the solution to problem F2;
- please state your name, hometown, and professional affiliation in each file.

We look forward to your (and your students’) participation.

### Please send correspondence to:

Boris Korsunsky  
[korsunbo@post.harvard.edu](mailto:korsunbo@post.harvard.edu)

The next Challenge problem will be posted online Feb. 14.