

Week 89 (5/24/04)

### Rope between inclines

A rope rests on two platforms which are both inclined at an angle  $\theta$  (which you are free to pick), as shown. The rope has uniform mass density, and its coefficient of friction with the platforms is 1. The system has left-right symmetry. What is the largest possible fraction of the rope that does not touch the platforms? What angle  $\theta$  allows this maximum value?

