

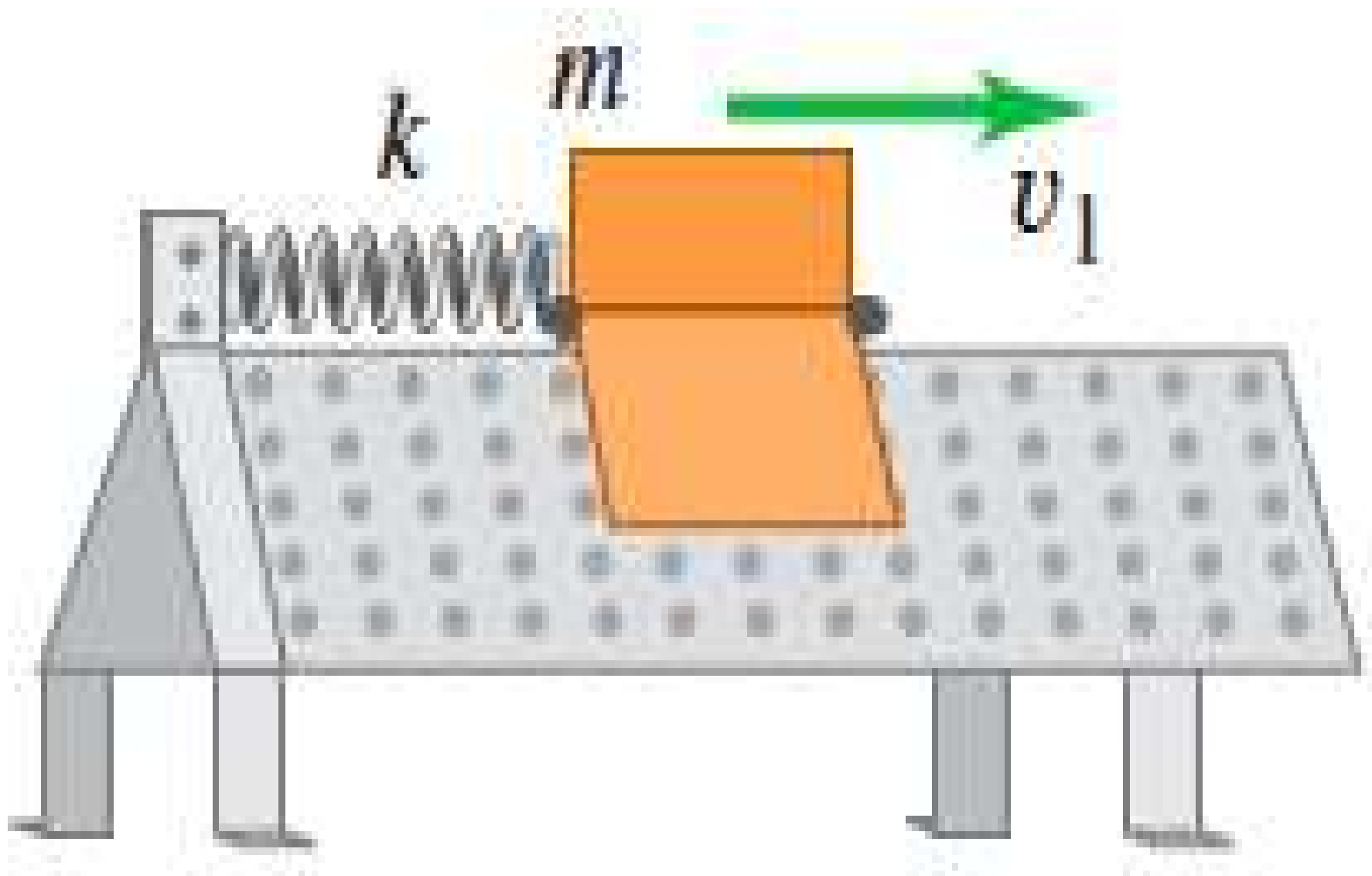
Work Done by Varying Force

Physics 513

You May Not Glide Through This One...

- An air-track glider of mass 0.100 kg is attached to a spring with force constant 20.0 N/m (see Figure). Initially the spring is unstretched and the glider is moving at 1.50 m/s to the right. Find the final position that the glider reaches to the right (a) if the air track is turned on, so that there is no friction, and (b) if the air is turned off, so that there is kinetic friction with coefficient $\mu_k = 0.47$

Figure



Extension Questions

- (c) How large would the coefficient of static friction have to be to keep the glider from springing back to the left? (d) If the coefficient of static friction between the glider and the track is $\mu_s = 0.60$, what is the maximum initial speed that the glider can be given and still remain at rest after it stops