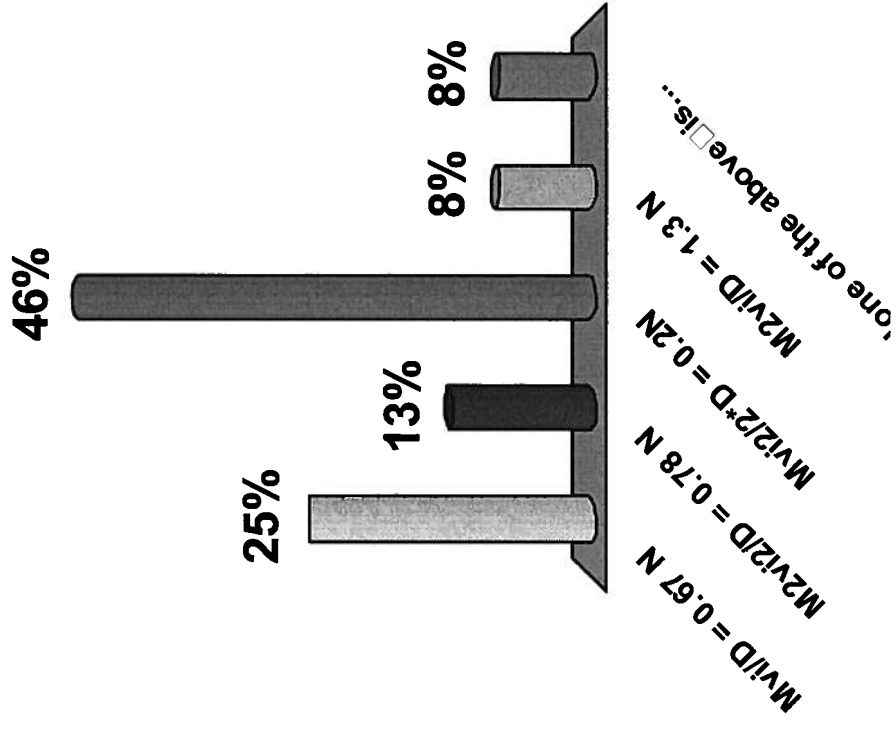


10/17/07R

A block ($M = 2\text{kg}$) sliding across the table at a speed of $v_i = 0.6\text{ m/s}$ comes to rest after traveling $D = 1.8\text{ m}$. What is the frictional force? $F_{Fr} =$

1. $Mv_i/D = 0.67\text{ N}$
2. $M^2v_i^2/D = 0.78\text{ N}$
- ✓ 3. $Mv_i^2/2*D = 0.2\text{N}$
4. $M^2v_i/D = 1.3\text{ N}$
5. None of the above is within 10%.



10/17/07B

- By the Work-Energy Theorem,
- $W_{Fr}^{NET} = KE_f - KE_i = 0 - KE_i$
 $= -Mv_i^2/2 = 2(0.6)^2/2 = 0.36J;$
- Also, $W_{Fr}^{NET} = -D * F_{Fr} = 1.8 F_{Fr} = 0.2N,$
- (where $D = 1.8$ m is the Distance travelled).
- Thus, the correct answer is
 $F_{Fr} = KE_i / D = Mv_i^2/2 * D = 0.2N$