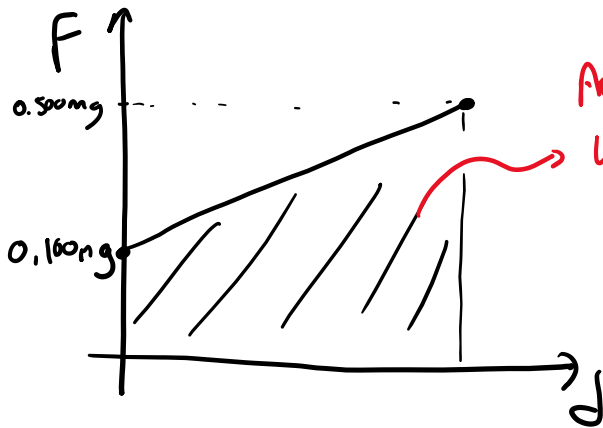| Name:	
ID:	
Total Score (out of 10 pts):	

-4/10 points for attending-

Question 1 (6/10 points)

A box is sliding at a speed of v_0 on a horizontal surface. Then it encounters a friction surface where the coefficient of friction increases linearly from 0.100 to 0.500 in a distance of d, and the box stops at d. Find v_0 in terms of given quantities and g. Hint: Remember last week's quiz!

Area is the work done by the friction.
$$= 0.300 mgd$$

Initial energy $= \frac{1}{2} m v_0^2$
spent to friction!

$$\frac{1}{2} m v_0^2 = 0.300 mgd$$

$$v_0 = \sqrt{0.6gd}$$