

## FREE BODY PROBLEM

Name \_\_\_\_\_

A 1.0kg mass is on a flat, horizontal surface. The mass is being accelerated to the right at  $15 \text{ m/s}^2$ . If the coefficient of friction between the mass and the surface is .51, answer the following questions.

- 1) Calculate the **force weight** that the mass has.
- 2) Since the mass is on a flat, horizontal surface; what must the **force normal** be? \_\_\_\_\_
- 3) Calculate the **force friction** felt by the mass.
- 4) Calculate the **net force** felt by the mass.
- 5) Using the scale  $1\text{cm} = 5.0\text{N}$ ; draw a free body diagram to show all of the forces acting on this mass. **THINK CAREFULLY!** Also remember that all forces are drawn from the center of the object.

