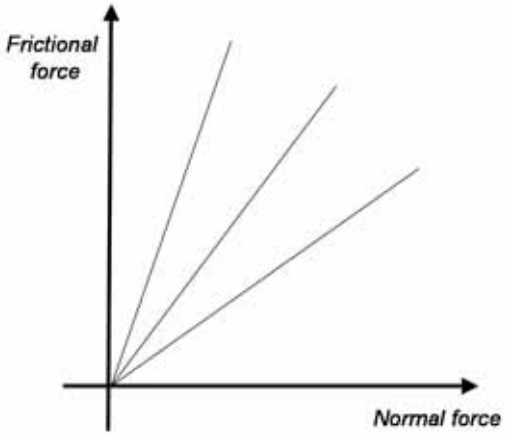
I. Interpreting force graphs

A. A box sliding on a rough surface feels both a normal force and a frictional force from that surface. Consider the graph at right of the magnitude of the frictional force vs. the magnitude of the normal force.



1. What is the name of the slope of each line?

2. What do the three different lines represent?

3. What is the interpretation of the slope of each line (Hint: this is different from it's name)?

4. What is the interpretation of the intercept of each line (the place where it crosses the vertical axis)?

II. Box of toys

Starting at $t = 0$, a child pushes horizontally on a box, making it slide across the floor. Friction exerted by the floor on the box opposes its motion with a force of 100 newtons. The child pushes with a force that changes, as this table shows.

time interval	$F_{\text{child on box}}$
0 to 2 sec.	120 N
2 sec. to 4 sec.	100 N
4 sec. to 6 sec.	90 N

On the axes to the right, sketch the box's position, velocity, and acceleration vs. time.