Name: _____ Per: _____ Date: _____EN _____

Mu Shoe extension: Coefficient of Friction Lab

Question:
What sports shoe offers the greatest amount of traction for both lateral and longitudinal movements as reflected by the coefficient of static friction values?

Procedure:

1. Place shoe on flat surface and connect to a newton scale.
2. Gradually increase the magnitude of force exerted on the show until the stationary shoe budges from its resting position.
3. The force which just barely budges the shoe from rest is the maximum value of the static friction which this show can experience.
4. Add 100 g, 200g 500 g and 1000 g for additional data.

Since friction is a function of the normal force. Calculate the Normal Force for each trial . In this experiment the mass x 9.8 m/s^2 = Normal Force

Static Friction : is the amount of force (N) to just budge the shoe

Sliding Friction: is the amount of force (N) to keep the show moving at a constant rate.

$F_{friction} - \mu F_{Normal}$

Type of shoe STATIC	Mass	Weight (F_N) ($mx9.8m/s^2$)	F (friction)	μ show your work
	200 g + shoe =			
	500 g+ shoe =			
	1000g + shoe =			
	200 g+ shoe =			
	500 g+ shoe =			
	1000g + shoe =			

Identify variables think about what friction force depends on what force? _____

_____ Independent variable. Hint: all the data goes on the same graph

_____ Dependent variable for both experiments.

Type of shoe STATIC	Mass	Weight (F_N) ($mx9.8m/s^2$)	F (friction)	μ show your work
	200 g + shoe =			
	500 g+ shoe =			
	1000g + shoe =			
	200 g+ shoe =			
	500 g+ shoe =			
	1000g + shoe =			

Graph: your results.

CLASS DATA

Type of shoe STATIC	μ	Type of shoe Sliding	μ

TRENDS:

CONCLUSIONS: