

PHYSICS
PROBLEMS: FRICTION

NAME _____
DATE _____ PERIOD ____

1. A 60 N force, F , is exerted horizontally to slide a 200 N box at constant speed across a floor.

(a) Draw the following forces, in roughly correct relative proportion, on the diagram below: W , N , F , f . Label each force with its letter.



(b) What is the coefficient of friction between the box and the floor? SHOW METHOD CLEARLY, INCLUDING UNITS.

(c) Is this a "realistic" problem in terms of the weight of the box and the size of the pushing force? In the U.S. we do not yet use metric force units in everyday life, so occasionally it is wise to ask yourself this question about metric physics problems. APPROXIMATELY how many pounds does the box weigh, and how many pounds is the pushing force?

box = _____ lb push = _____ lb

2. The same 200 N box considered in the previous problem is now pulled at constant speed across a different floor by 20 N force, F , applied along a rope which makes an angle of 53 degrees with the floor.

(a) Draw the following forces on the diagram below: W , W_x , W_y , N , F , f . Label each force with its letter.

