

Name _____ PD. _____

Practice Problems: You show all work to get full credit. Be sure to use the correct units.

We can use the generalized formulas

To find normal force $F = m(a)$

To find force of friction $F_f = \mu F_N$

1. An object has a coefficient of kinetic friction of 0.58 and a normal force of 55N. Find the force of kinetic friction.

 2. An object has a coefficient of static friction of 0.90 and a normal force of 110N. Find the force of static friction.

 3. An object has a mass of 75 kg and a coefficient of friction of 0.74.
 - a. Find the force of gravity (weight) for the mass.

 - b. If gravity and normal force cancel, what is the normal force?

 - c. Find the force of friction in this situation.

 4. There are 230N of kinetic Friction and a coefficient of 0.36. What is the Normal Force? **Draw the free body diagram and label all known forces.**
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Static: $F_{fs} = \mu_s(F_N)$

Kinetic: $F_{fk} = \mu_k(F_N)$

5. An object is known to have a coefficient of kinetic friction (μ_k) of 0.68 and a coefficient of static friction (μ_s) of 0.90. If the normal force is 200 N, how much frictional force will it encounter while **it is moving**?
6. An object has 66 N of static friction and a normal force of 660. What is the coefficient?
7. There are 230N of kinetic Friction and a coefficient of 0.36. What is the Normal Force? **Draw the free body diagram and label all known forces.**
8. An 103 kg object has a $\mu_k = 0.36$ and a $\mu_s = 0.53$. Assuming it is on a flat surface
 - a. What is the normal force on the object (*draw free body diagram*)
 - b. How much force is required to get the object to start to move from rest?
 - c. If the above object is moving already, and a tension force of 35N to the right is pulling it, what will be the NET Force on the object? *Force is a vector so direction should be included.*
 - d. What is the acceleration (*with direction*) of the object based on your answer for part c?