Law of Conservation of Energy

KE Kinetic Energy = 1/2 mv2

PE Potential Energy = mgh

Ex: There is a skier with a mass of 75kg and they are standing on a hill that has a height of 30. M and the hill is at an angle of 23.50.

1. What is the skiers potential energy at the top of the hill?
2. What is their final velocity at the bottom of the hill, given that there is no friction?
3. For some reason, the skier only had a final velocity of 17m/s. Why? On this particular run, the friction was turned on.
4. So, how much work was done by friction?
5. What is the force of friction?

W=Fd

1. What is the coefficient of friction?

Ex 2: A snowboarder (m=35kg) is trying to escape a bear. They start on a hill of 18m, descend through a valley and then up the other side to a vertical height of 12m and safely escaping the bear. What is the coefficient of friction? 450 inclination for both hills.

s