Virtual Energy Final Lab and Report

Physics

Using the following parameters and the equations from the lab protocol, calculate the values below: Applied Force (from the person): 50.00 N (up the ramp), Object: Refrigerator (175 kg, $\mu = 0.5$), Position: 10 m, Ramp Angle: 30^{o}. Show all your formulas and calculations.

1. The *initial stored energy of the system* (hint – use the left-hand side of CLEE).
2. The *component of the gravitational force* acting parallel to the ramp.
3. The size of the *frictional force on the ramp*.
4. The refrigerator's *velocity at the bottom of the ramp* (hint – remember that the person will be pushing against the refrigerator in addition to the other forces present).
5. The size of the *frictional force on the flat ground*.
6. The *distance the refrigerator will travel* along the ground before it stops.
7. The *final energy of the system* (hints – use the right-hand side of CLEE, and the answer is 0 Joules!).

Now use "The Ramp" to verify your answers. Where you are correct, indicate it with a check mark. For incorrect answers, correct your calculations.

Lastly, in a short paragraph, answer these questions: *If the Law of Conservation of Energy says that energy is never lost, why is the final energy of this system zero? Where does the initial energy of the system go?*