Worksheet 7.3 - Kinetic Energy

1. A 3.0 kg ewok is traveling at a constant speed of 7.5 m/s. What is its kinetic energy?

2. The kinetic energy of a 20.0 N droid is 5.00×10^2 J. What is the speed of the droid?

3. A 10.0 N lightsaber is accelerated from rest at a rate of 2.5 m/s^2. What is the kinetic energy of the lightsaber after it has accelerated over a distance of 15.0 m.

4. A 1200.0 N Wookie jumps off a cliff on Earth. What is its kinetic energy after it falls for 4.50 s?

5. An 8.0 kg bantha poodoo is dropped from a height of 7.0 m. What is the kinetic energy of the poodoo just before it hits the ground? (No kinematics!)

6. A 9.00 kg object falls off of a 1.2 m high table. If all of the objects potential energy is converted into kinetic energy just before it hits the floor, how fast is it moving? (Solve without using kinematics)

7. Solve #6 using kinematics this time. Is there any difference?

8. A golfer wishes to improve his driving distance. Which would have more effect:
(a) *doubling the mass* of his golf club or
(b) *doubling the speed* with which the clubhead strikes the ball?
Explain your answer.

1) 84 J 2) 22.1 m/s 3) 38 J 4) 119 000 J 5) 550 J 6) 4.8 m/s 7) 4.8 m/s (down) 8) b