Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Physics 11

**Worksheet 7.3**

**Kinetic Energy**

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| 1. A 3 kg ewok is traveling in a circle (i.e. the direction of his velocity is changing) at a constant speed of 7.5 m/s. What is its kinetic energy? 2. The kinetic energy of a 20 N droid is 500 J. What is the droid’s speed? 3. A 10 N lightsaber is accelerated from rest at a rate of 2.5 m/s2. What is the kinetic energy of the lightsaber after it has accelerated over a distance of 15 m? 4. A 1.2 kN wookie jumps off a cliff on Earth. What is its kinetic energy after if falls for 4.5 s? | 1. A 9 kg object falls off of a 1.2 m high table. If the object’s potential energy is converted into kinetic energy as it falls, how fast is it moving as it hits the floor? Solve without using kinematics. 2. Solve the previous question using kinematics. Is there any difference in your answers? 3. Which of the following has a greater effect on the kinetic energy of an object?    1. Doubling its mass.    2. Doubling its speed.   Explain why. |

Answers: 1) 84.4 J 2) 22.1 m/s 3) 38.3 J 4) 119,070 J 5) 4.85 m/s

6) 4.85 m/s – Answers are identical!

7) ‘a’ would double the kinetic energy, ‘b’ would quadruple the kinetic energy, so ‘b’ has a greater effect.