Name _____ Date _____
Regents Physics Forces WS #9R
Period _____ Mrs. Nadworny

Forces Review

Directions: Solve the following problems using the GUESS method and correct significant figures. Be sure to show ALL work. Your reference tables may be necessary to find the coefficient of friction for the problems below.

1. A physmagician pulls a 3.0 kg fluffy bunny out of his hat with an upwards force of 50.0 N.
   a. Draw and label a free body diagram of the situation.

   b. Calculate the weight of the bunny.

   c. What is the net force acting on the bunny?

   d. What is the upwards acceleration of the bunny?

2. During a collision with the wall a 78 kg driver is brought to rest from a speed of 16.4 m/s over a period of 2.8 seconds. What is the net force acting on the driver of the car?

3. An astronaut (m = 85 kg) visits a far off moon during a space mission. During his free time he steps onto a scale and views his weight as 173 N. What is the acceleration due to gravity on this moon?

4. During an experiment, a 4.7 kg copper block is pushed along a steel beam with an applied force of 24 N to the right.
    a. Draw and label an appropriate free body diagram.

    b. Calculate the weight of the block.

    c. What is the normal force supporting the block?

    d. What is the coefficient of friction between the two surfaces?

    e. Calculate the force due to friction acting on the block.

    f. What is the net force of the block?

    g. Calculate the acceleration of the block?

5. A worker pushes a 19.8 kg granite block across a concrete floor at a constant speed. She applies a force of 113 N. Determine the coefficient of friction between the granite block and the concrete floor.

Answers in size order: 0.36, 0.582, 1, 2.0, 7, 7.0, 17, 21, 29, 46, 46, 460