

STUDENT ID: _____

NAME: _____

1010, Fall 2012, Fun-Sheet Exercise 1.

Each m/c question is worth 1.5 pts. The long answer 10 pts. Total points = 40.

Beware of grabbing at a numerical answer simply because you happen to see that number as you are calculating. We are sneaky and put in choices that are numbers you are likely to produce if you are not sure how to do the problem correctly. For many problems, it is good to make a simple sketch to picture the problem correctly.

For all of these problems, assume that air resistance is not important *unless* you are told otherwise.

Conversions you may or may not need:

$$1 \text{ pound} = 4.45 \text{ N}, \quad 1 \text{ slug} = 14.594 \text{ kg}, \quad 1 \text{ mph} = 0.447 \text{ m/s}.$$

Formulas you may or may not need.

$$x = x_0 + vt$$

$$v = v_0 + at$$

$$x = x_0 + v_0t + \frac{1}{2} at^2$$

$$\underline{v} = (\Delta \underline{x} / \Delta t) = (\underline{x}_f - \underline{x}_0) / (t_f - t_0)$$

$$\underline{a} = (\Delta \underline{v} / \Delta t) = (\underline{v}_f - \underline{v}_0) / (t_f - t_0)$$

Force of Kinetic Friction = 0.3 x weight (for a moving object, like a book on a table)

$$\underline{F}_{\text{net}} = m \underline{a}$$

$$F_{\text{gravity}} = m g$$

$$F_{\text{spring}} = -kx$$

To ensure that you properly understand the question, we strongly recommend that you make a sketch of the situation described by the problem before giving an answer.

VERSION PINK or GREEN

Remember to write your name on your answer sheet. Write the color on your M/C answer sheet. Return both the answer sheet and the exam.

**'On my honor as a University
of Colorado at Boulder student
I have neither given nor received
unauthorized assistance on this
work.'**

Name _____

Signature _____