STUDENT ID: _____ NAME: _____

1010, Fall 2012,
Fun-Sheet Exercise 3.

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.

Formulas & Constants you may or may not need.

$c = \lambda f = \lambda \nu$	$\nu = f = 1/T$
$F_c = (k\, q_A\, q_B) / r^2$	
$KE = \frac{1}{2} m v^2$	$F = ma$
$GPE = m g \Delta h$	$EPE = q \Delta V$
$W = f d$	$W_{ext} - \lvert W_{friction} \rvert = \Delta GPE + \Delta KE + \Delta EPE$
$Power = e\, \sigma\, T^4\, a$	$\lambda_{peak} = constant / T$
$\Delta V = IR$	$P = I \Delta V$

- Speed of light, $c = 3 \times 10^8 m/s$
- Stefan-Boltzman constant, $\sigma = 5.67 \times 10^{-8}\ J/(s\ m^2\ K^4)$
- Coulomb constant, $k = 8.99 \times 10^9\ Nm^2/C^2$
- Magnitude of charge on an electron, $e = 1.6 \times 10^{-19}\ C$
- Mass of an electron, $m_e = 9.11 \times 10^{-31}\ kg$
- Acceleration of gravity, $g = 9.8 m/s^2$

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.

SAMPLE

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.'

Signature _____