Name_____Outdoor School name_____

Show your work, round to the correct significant figures, circle your answers, and label them with units.

When you have finished this, go to the website and check your answers. If you got a problem wrong, cross it off on the front, and do it correctly on the back.

1. Convert 77 K to ^{o}C   Convert 72 ^{o}F to ^{o}C   Convert -40.0 ^{o}C to ^{o}F

2. What is the average kinetic energy of a molecule of an ideal gas at 20.0 ^{o}C? What is the total internal energy of 1.00 moles (6.02x10^{23} molecules) of an ideal gas at this temperature?

3. At what temperature in Celsius is the average kinetic energy of an ideal gas molecule 5.00x10^{-21} J?

4. What is the RMS speed of a nitrogen molecule (m = 2x14 = 28.0 u) at 30.0 ^{o}C?

5. At what temperature in Celsius is the RMS speed of oxygen molecules (m = 2x16 = 32 u) 470. m/s?