University of New Mexico

Physics 161, Section 001

Problem Set #3

Issued: February 1, 2006

Due: February 10, 2006

Do all of the exercises and problems listed below. Please hand in your problem set at the start of class. Be sure to put your name, course number (Physics 161-001), and BOX number on your homework. Show all your work, write clearly, and be sure to include the units!

Exercises: **Young & Freedman 18.2, 18.25, 18.30, 18.43, 18.47, 18.52**

Problems: **Young & Freedman 18.69, 18.77**

Extra Credit (worth up to 1% of your final grade): ***Young and Freedman, Challenge Problem 18.88***

Beyond Extra Credit: ***If you feel exceptionally enthusiastic and want to understand how the critical point temperature, pressure and volume (T_c, p_c, V_c) for a substance are obtained from the coefficients a and b of the Van der Waals equation, then try Challenge Problem 18.89. There is no additional extra credit for doing this in this class, but doing this problem will contribute greatly to your understanding of critical phenomena.***