CHAPTER ONE

Directions:

- Assignments may be periodically collected at the beginning of lecture following the completion of the chapter (and graded as a quiz) and/or representative problems can be placed on quizzes.

- Place your name and/or initials at the top of all pages submitted.

- Solve each of the following problems, showing all work for full credit.

- If a chemical equation is required (and is not given), then the balanced equation should be shown.

- If an equation is involved, show the equation, the appropriate substitution (with units), and the solution (with units).

- If the problem involves math (unit conversion/factor label), show the units and unit cancellation in arriving at your answer for full credit.

- To receive full credit – if the units in the problem pertain to a particular substance, state the substance (i.e. if you are talking about grams of gold – state grams Au - not just grams).

- All answers should be reported with the correct units to receive full credit.

- All answers should be reported with the correct number of significant digits to receive full credit.

- Only neat, clearly labeled work will receive full credit.

- Place your final answer on the blanks or in the box provided.

- Please print and write on only one side of each page you use. Assignments printed on two sides of the paper will not be graded.
Chapter One:

Suggested Problems:

• Chapter One (Chemistry – A Molecular Approach – 2nd Edition)
• Pages 35 – 41.
• Problems: 46 (a, b, c, d), 48 (a, b, c, d), 56 (a, b, d), 64, 74 (a, b, c), 78 (a, b, c, d), 87 (a, b), 98, 100, 114, 120, and 122

46. Check the appropriate box for each property given.

<table>
<thead>
<tr>
<th></th>
<th>physical property</th>
<th>chemical property</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
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<tr>
<td>b.</td>
<td></td>
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<tr>
<td>c.</td>
<td></td>
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<tr>
<td>d.</td>
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48. Check the appropriate box for each change given.

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<td></td>
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</tbody>
</table>
Name ______________________________

56. a. 

b. 

d. 

64. 

Cubes
Name ______________________________

74. a. ________________________
    b. ________________________
    c. ________________________

78. a. ______ b. ______ c. ______ d. ______

87. a. ________________________
    b. ________________________
Name ______________________________

98.

Percentage:

__________     ______
____________ ______
_______________ ____________

100.

__________     ______
____________ ______
_______________ ____________
Name ______________________________

114. Density of Iron:

120. Mileage of Honda Insight
122. Volume of a sphere = \( \frac{4}{3} \pi (r)^3 \)

This indicates that the atoms in a gas are __________________________________________________________________________
Answers to Suggested Problems:

46. Check the appropriate box for each property given.

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56. a. 3.88 Mg  
    b. 5.52 ns  
    c. 8.79 μL

64. 64 cubes

74. a. 4.50 mL  
    b. 27.43 °C  
    c. 0.873 g

78. a. 4  
    b. 1  
    c. 4  
    d. 7

87. a. 391.3  
    b. 1.1 x 10^4

98. 1.49 x 10^6 mi^2  
42.1 % farmland

100. 4.1 mL of suspension

114. 0.284 lb Fe / in^3

120. 8.6 km

122. 3.7 x 10^{-3} %  
This says that the separation is very large in the gas phase