Name _____ Date _____ Class _____

4.1 DEFINING THE ATOM

Section Review

Objectives

- Describe Democritus's ideas about atoms
- Explain Dalton's atomic theory
- Describe the size of an atom

Vocabulary

- atom
- Dalton's atomic theory

Part A Completion

Use this completion exercise to check your understanding of the concepts and terms that are introduced in this section. Each blank can be completed with a term, short phrase, or number.

Elements are composed of tiny particles called ___1___. **1.** _____

Atoms of any one element are ___2___ from those of any **2.** _____

other element. Atoms of different elements can form ___3___ **3.** _____

by combining in whole-number ratios. Chemical reactions **4.** _____

occur when atoms are ___4___.

Part B True-False

Classify each of these statements as always true, AT; sometimes true, ST; or never true, NT.

_____ **5.** Atoms of one element change into atoms of another element during chemical reactions.

_____ **6.** Atoms combine in one-to-one ratios to form compounds.

_____ **7.** Atoms of one element are different from atoms of other elements.

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Part C Matching

Match each description in Column B to the correct term in Column A.

Column A	Column B
_____ **8.** atom	**a.** an instrument used to generate images of individual atoms
_____ **9.** scanning tunneling microscope	**b.** Greek philosopher who was among the first to suggest the existence of atoms
_____ **10.** John Dalton	**c.** the smallest particle of an element that retains its identity in a chemical reaction
_____ **11.** Democritus	**d.** English chemist and schoolteacher who formulated a theory to describe the structure and chemical reactivity of matter in terms of atoms

Part D Questions and Problems

Answer the following questions in the space provided.

12. In what type of ratios do atoms combine to form compounds?

_____

_____

_____

13. How many copper atoms would you have to line up side by side to form a line 1 m long?

_____

_____

_____