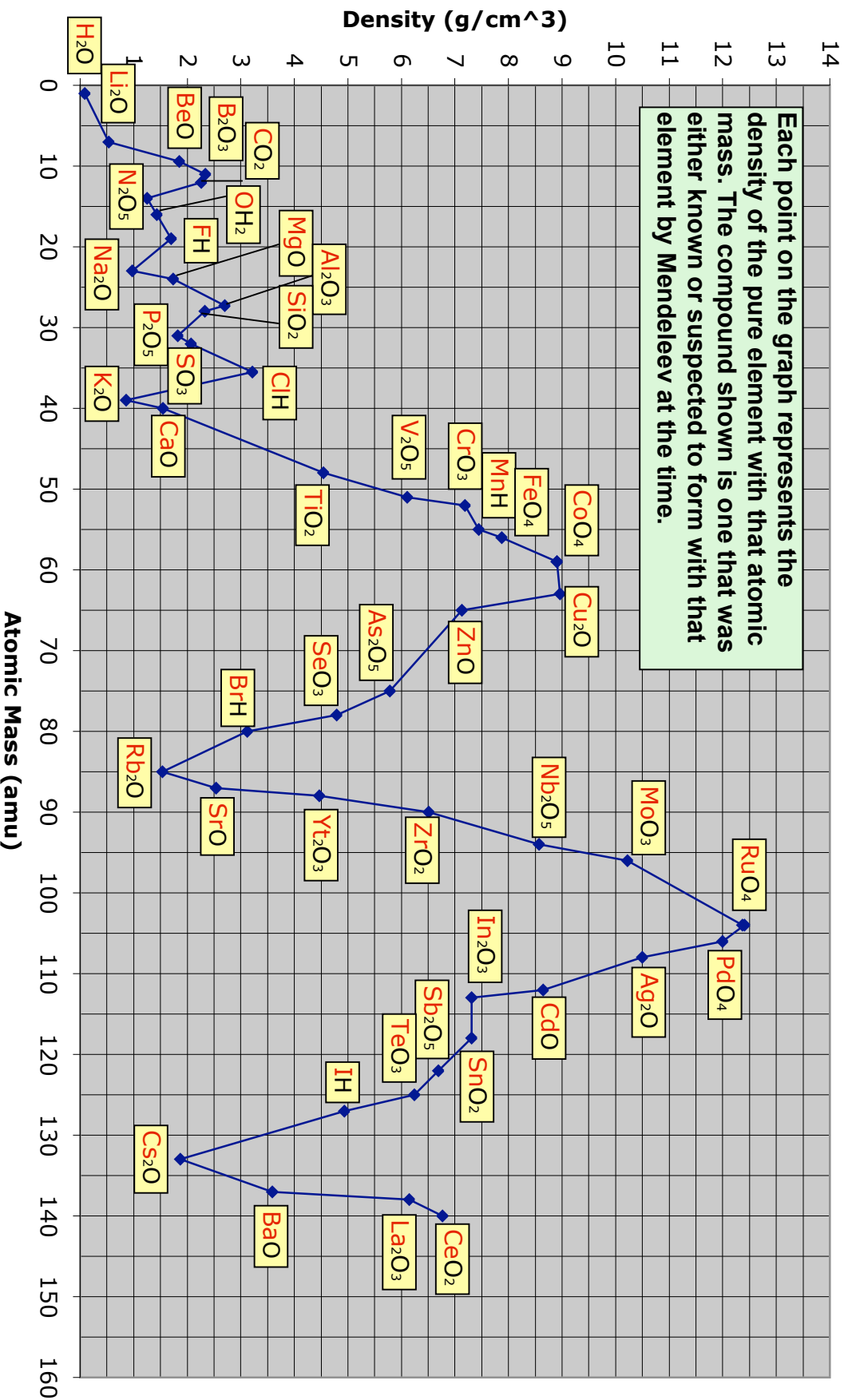


Element Density and Compound Formation vs. Atomic Mass for Many Elements Known by Mendeleev



Discovering new Elements

Name _____

Using the graph on the other side of this page, pretend you are Mendeleev and predict the existence of new elements as well as their properties.

- 1) Mendeleev arranged a table of elements with rows and columns based on the patterns he saw in the graphs above. What patterns can you find?
- 2) Using the data in the graph, Mendeleev studied the element patterns and found gaps where it seemed that an element was missing. He predicted that new elements would be discovered to fill in the missing parts of his table. He predicted that three new elements would be found with an atomic mass less than 80. Given the graph on the reverse side of this page, between which elements would you predict another element should exist. (Hint: Look for gaps in the chemical compound formation pattern.)
- 3) Make up names for your new elements. Predict their atomic mass, chemical formula when combined with oxygen, and density.

element name	atomic mass	oxide formula	density