

1. What two major scientific advances have not been able to alter the fundamental nature and structure of the periodic table? Why haven't they?
2. Explain why the table of elements is referred to as "periodic."
3. What was the one event historians consider as the formal birth of the modern periodic table?
4. What was the major difference between Mendeleev's table and those that came before his?
5. Describe Johann Dobereiner's method of arranging the elements. How did his system influence others and their approach?
6. What was wrong with the mathematical approach pursued by Jean-Baptiste-Andre Dumas?
7. What shape was the "table" put forth by de Chancourtois?
8. What was wrong with the table put forth by John Newlands with its "law of octaves"?

9. Which elements were not predicted by Mendeleev (or anyone else)?
  
10. What was the fundamental quantity that Henry Moseley found proof of?
  
11. What were the advantages of reordering the table based on atomic number instead of atomic weight? Provide examples.
  
12. By using the modern periodic table, what did J. J. Thomson conclude about elements with similar electronic configurations?
  
13. What is it that quantum mechanics cannot explain or predict?
  
14. Briefly describe four more variations on, or departures from, the modern periodic system.