

## Unit 2 : Elements and Compounds

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Chem 30A : Answers to homework problems not found in text.

### Chapter 1 :

44. (a), (c) elements; (b), (d) compounds

46. (a) Ca (b) ~~Ca~~ K (c) Pu

48. (a) Nitrogen (b) Lead (c) Uranium

### Chapter 3

56. Metals are located to the left of the "staircase" and the non-metals are located to the right of the "staircase".

60. Non-metals are mostly gases. If they are a solid, they are often brittle. Also, they are poor conductors of heat and electricity.

62. (a) 1 or 1A (b) 17 or 7A (c) 2 or 2A

64. Metals are mostly solids. Some are highly reactive with water. They are good conductors of heat and electricity.

66. (b) At (halogen)

68. noble gases: Ne, He, Xe

70. alkaline earth metals: (b) Ba (c) Be

Chapter 6

20. (a) 12 (b) 8 (c) 8 (d) 12
22. 12 nitrogen atoms; 6 phosphorus atoms;  
54 hydrogen atoms; 24 Oxygen atoms

Chapter 11

12. Iron makes up most of the Earth's core.
28. Coke is a nearly pure form of carbon ~~is~~ prepared from coal. Slag is the combination of silicate impurities from the iron ore and limestone.
30. skip!
32. skip!
34. Steel is an alloy of iron and carbon. It is made from cast iron by adjusting the carbon content when pressurized oxygen reacts with pig iron.

Chapter 12

12. Ozone in polluted air causes breathing problems and makes heart/lung disease worse.

Chapter 16

66. The role of nitrogen in plants is for synthesizing amino acids.
68. The  $K^+$  is exchanged for  $H^+$ , so the  $H^+$  ~~is~~ goes to the soil, making it acidic.