

9. Is Hg a molecular element?

Law of Definite Proportion.
**WHEN ELEMENTS COMBINE TO FORM A SPECIFIC COMPOUND,
THEY COMBINE IN DEFINITE PROPORTIONS BY MASS.**

10. What is the fundamental difference between a mixture and a compound?

1.6 THE PERIODIC TABLE OF THE ELEMENTS

1. List some of the contributions made by Dimitri Mendeleev (1834-1907) to the classification of elements.

2. What does the atomic number represent?

3. On what basis is the modern periodic table of the elements arranged?

4. How does the modern periodic table of the elements differ fundamentally from Mendeleev's table?

The Periodic Law.
CHEMICAL AND PHYSICAL PROPERTIES OF ELEMENTS VARY ACCORDING TO THEIR ATOMIC NUMBERS IN A PERIODIC WAY.

5. Examine the periodic table model below.

	1																18	
1	□	2																
2	□	□																
3			3	4	5	6	7	8	9	10	11	12						
4																		
5																		
6																		
7																		

Lanthanide series

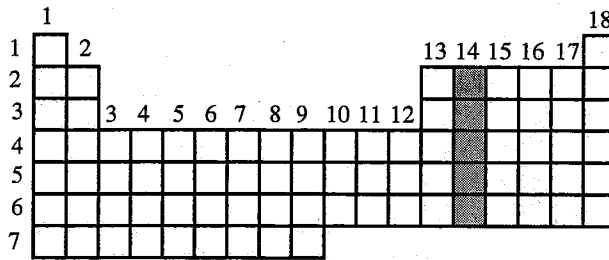
□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
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Actinide series

□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
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What is the name of the horizontal shaded band (or any other horizontal shaded zone)? _____

6. Examine the periodic table model below.



Lanthanide series

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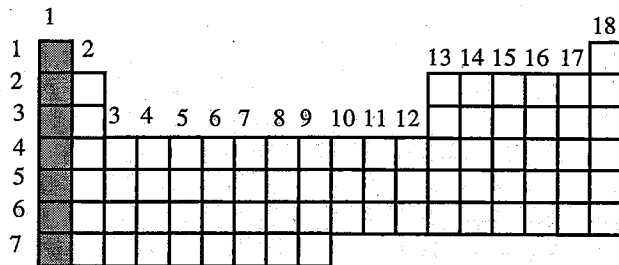
Actinide series

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What is the name of the vertical shaded band (or any other vertical zone)? _____

The extended form of the periodic table places the lanthanide series and the actinide series into the main body of the table. Generally the lanthanide series and the actinide series have the properties of group 3. To simplify the table, both series are listed separately under the main body.

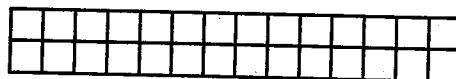
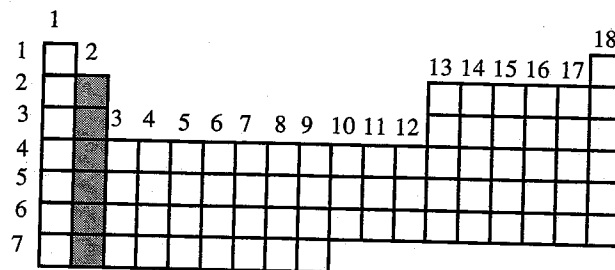
7. Examine the periodic table model below.



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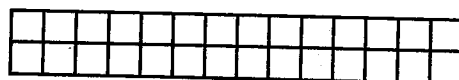
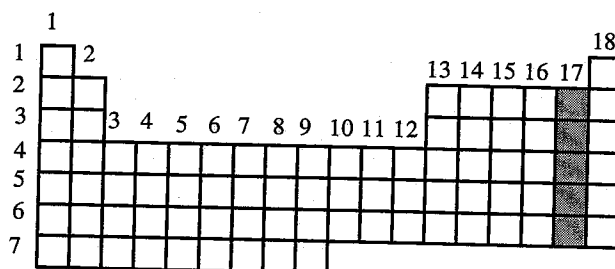
What is the name given to the elements in zone shaded? _____

8. Examine the periodic table model below.



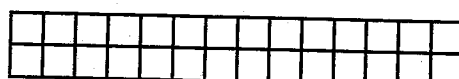
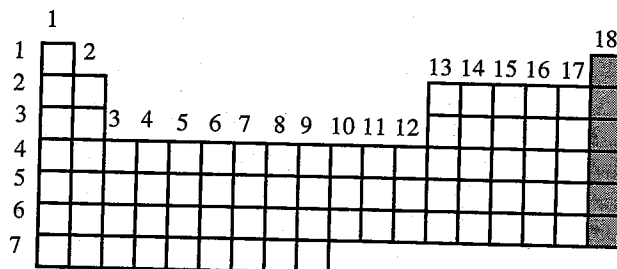
What is the name given to the elements in zone shaded? _____

9. Examine the periodic table model below.



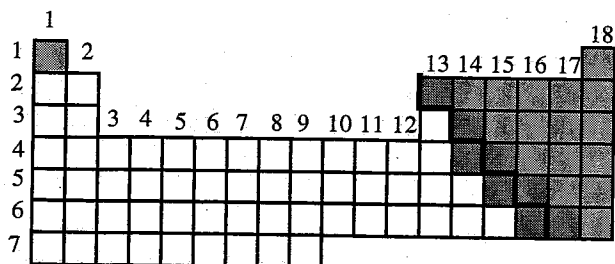
What is the name given to the elements in zone shaded? _____

10. Examine the periodic table model below.



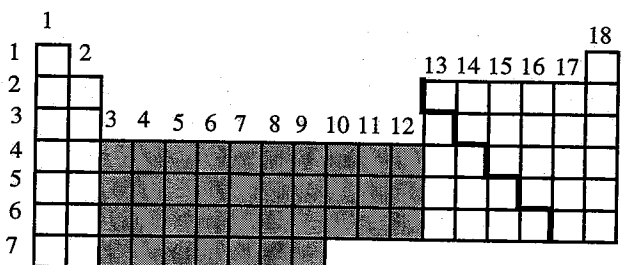
What is the name given to the elements in zone shaded? _____

11. Examine the periodic table model below.



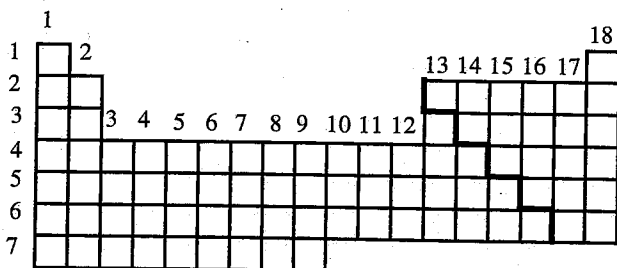
What is the name given to the elements in dark-shaded zone? _____
 What is the name given to the elements in light-shaded zone? _____
 What is the name given to the elements in non-shaded zone? _____

12. Examine the periodic table model below.



What is the name given to the elements in shaded zone? _____

13. Examine the periodic table model below.



What is the name given to the elements in shaded zone

14. Briefly list the major general characteristics for most metals and non-metals in the spaces provided in the table below.

Type	Characteristics
metals	
non-metals	

15. All metallic elements are solids at room temperature with the single exception of

16. What is an alloy? Give also a couple of examples.

17. Gold and silver may occur in nature in their pure state. What does this fact indicate about the reactivity of these two metals?

18. What do noble metals and noble gases have in common?

19. In period 6, the regular ascending sequence of atomic numbers has a gap between lanthanum (57) and hafnium (72). In period 7, the regular ascending sequence of atomic numbers has a gap between actinium (89) and unnilquadium (104). Explain why this is so.

20. What is the trend in reactivity for metals in groups 1 and 2?

21. Which two alkali metals would be most reactive chemically?

22. Which is the most reactive group of non-metals?

23. What is the trend in reactivity for halogens?

24. Draw arrows on groups 1, 2, and 17 to show the direction for the trend in increasing chemical activity.

	1																18					
1		2																				
2																	13	14	15	16	17	
3			3	4	5	6	7	8	9	10	11	12										
4																						
5																						
6																						
7																						

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25. What is the general trend in reactivity for metals on the periodic table?

26. Drawing a single arrow on the periodic table below, show the trend in increasing reactivity for metals.

	1																	18				
1		2																				
2																		13	14	15	16	17
3			3	4	5	6	7	8	9	10	11	12										
4																						
5																						
6																						
7																						

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39. Complete the table below by looking up the information in a periodic table of the elements.

Chemical Symbol	Name of the Element	Atomic Number	Atomic Molar Mass (g/mol)	State at Room Temperature (solid/liquid/gas)
		13		
Ar				
			10.81	
	beryllium			
C				
	calcium			
		17		
			19.00	
			1.01	
		2		
			30.10	
Li				
			24.31	
	nitrogen			
			22.99	
Ne				
	oxygen			
			30.97	
		16		
	silicon			