

name: \_\_\_\_\_

date: \_\_\_\_\_

## writing element and ion symbols – practice problems

1. How many protons and electrons are present in a vanadium atom?
2. How many protons and electrons are present in a copper atom?
3. How many protons and electrons are present in a arsenic atom?
4. How many protons and electrons are present in a gallium atom?
5. How many protons and electrons are present in a selenium atom?
6. What is the name of the element that contains 5 protons?
7. What is the name of the element that contains 17 protons?
8. What is the name of the element that contains 25 protons?
9. What is the name of the element that contains 82 protons?
10. What is the name of the element that contains 92 protons?
11. Write the chemical symbol for the ion with 12 protons, 10 electrons, and 12 neutrons.
12. Write the chemical symbol for the ion with 16 protons, 18 electrons, and 17 neutrons.
13. Write the chemical symbol for the ion with 37 protons, 36 electrons, and 49 neutrons.
14. Write the chemical symbol for the ion with 7 protons, 10 electrons, and 8 neutrons.
15. Write the chemical symbol for the ion with 30 protons, 32 electrons, and 35 neutrons.
16. How many protons, neutrons, and electrons are in the  $^{59}\text{Ni}^{2+}$  ion?
17. How many protons, neutrons, and electrons are in the  $^{91}\text{Zr}^{4+}$  ion?
18. How many protons, neutrons, and electrons are in the  $^{140}\text{Ce}^{3+}$  ion?
19. How many protons, neutrons, and electrons are in the  $^{79}\text{Se}^{2-}$  ion?
20. How many protons, neutrons, and electrons are in the  $^{45}\text{Sc}^{3+}$  ion?
21. How many protons, neutrons, and electrons are in the  $^{13}\text{C}^{4-}$  ion?
22. Write the complete chemical symbol for the ion with 84 protons, 125 neutrons, and 80 electrons.
23. Write the complete chemical symbol for the ion with 27 protons, 32 neutrons, and 25 electrons.
24. Write the complete chemical symbol for the ion with 73 protons, 108 neutrons, and 68 electrons.
25. Write the complete chemical symbol for the ion with 31 protons, 39 neutrons, and 28 electrons.
26. Write the complete chemical symbol for the ion with 87 protons, 136 neutrons, and 86 electrons.

## writing element and ion symbols – practice problems

1. How many protons and electrons are present in a vanadium atom?

23 protons, 23 electrons

2. How many protons and electrons are present in a copper atom?

29 protons, 29 electrons

3. How many protons and electrons are present in an arsenic atom?

33 protons, 33 electrons

4. How many protons and electrons are present in a gallium atom?

31 protons, 31 electrons

5. How many protons and electrons are present in a selenium atom?

34 protons, 34 electrons

6. What is the name of the element that contains 5 protons?

boron, B

7. What is the name of the element that contains 17 protons?

chlorine, Cl

8. What is the name of the element that contains 25 protons?

manganese, Mn

9. What is the name of the element that contains 82 protons?

lead, Pb

10. What is the name of the element that contains 92 protons?

uranium, U

11. Write the chemical symbol for the ion with 12 protons, 10 electrons, and 12 neutrons.

$^{24}_{12}\text{Mg}^{2+}$

12. Write the chemical symbol for the ion with 16 protons and 18 electrons, and 17 neutrons.

$^{33}_{16}\text{S}^{2-}$

13. Write the chemical symbol for the ion with 37 protons, 36 electrons, and 49 neutrons.

$^{86}_{37}\text{Rb}^{+}$

14. Write the chemical symbol for the ion with 7 protons, 10 electrons, and 8 neutrons.

$^{15}_{7}\text{N}^{3-}$

15. Write the chemical symbol for the ion with 30 protons, 32 electrons, and 35 neutrons.

$^{65}_{30}\text{Zn}^{2-}$

16. How many protons, neutrons, and electrons are in the  $^{59}\text{Ni}^{2+}$  ion?

28 protons, 26 electrons, 31 neutrons

17. How many protons, neutrons, and electrons are in the  $^{91}\text{Zr}^{4+}$  ion?

40 protons, 36 electrons, 51 neutrons

18. How many protons, neutrons, and electrons are in the  $^{140}\text{Ce}^{3+}$  ion?

58 protons, 55 electrons, 82 neutrons

19. How many protons, neutrons, and electrons are in the  $^{79}\text{Se}^{2-}$  ion?

34 protons, 36 electrons, 45 neutrons

20. How many protons, neutrons, and electrons are in the  $^{45}\text{Sc}^{3+}$  ion?

21 protons, 18 electrons, 24 neutrons

21. How many protons, neutrons, and electrons are in the  $^{13}\text{C}^{4-}$  ion?

6 protons, 10 electrons, 7 neutrons

22. Write the complete chemical symbol for the ion with 84 protons, 125 neutrons, and 80 electrons.

$^{209}_{84}\text{Po}^{4+}$

23. Write the complete chemical symbol for the ion with 27 protons, 32 neutrons, and 25 electrons.

$^{59}_{27}\text{Co}^{2+}$

24. Write the complete chemical symbol for the ion with 73 protons, 108 neutrons, and 68 electrons.

$^{181}_{73}\text{Ta}^{5+}$

25. Write the complete chemical symbol for the ion with 31 protons, 39 neutrons, and 28 electrons.

$^{70}_{31}\text{Ga}^{3+}$

26. Write the complete chemical symbol for the ion with 87 protons, 136 neutrons, and 86 electrons.

$^{223}_{87}\text{Fr}^{+}$