



Name _____ Class _____ Date _____

1 Which trends are observed when the elements in **Period 3** on the Periodic Table are considered in order of **increasing atomic number**?

- A The atomic radius decreases, and the first ionization energy generally increases.
- B The atomic radius decreases, and the first ionization energy generally decreases.
- C The atomic radius increases, and the first ionization energy generally increases.
- D The atomic radius increases, and the first ionization energy generally decreases.

3 Which element is an **alkali metal**?

- A Na
- B Mg
- C Al
- D Cl

2 Which of the following **Period 4** elements has the **most metallic characteristics**?

- A Ca
- B Ge
- C As
- D Br

4 In general, atoms of **transition elements** in **Period 5** are characterized by an incomplete

- A 3p subshell
- B 4p subshell
- C 3d subshell
- D 4d subshell

PREVIEW

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7

- C valence electrons
- D occupied principal energy levels

- B have lower first ionization energies
- C conduct electricity more readily
- D lose electrons more readily

9 Aqueous solutions of compounds containing element X are **blue**. Element X could be

- A carbon
- B copper
- C sodium
- D sulfur

10 Which element attains the structure of a **noble gas** when it becomes a **1+ ion**?

- A K
- B Ca
- C F
- D Ne

| | | |
|----|---------|---|
| 18 | He | 1 |
| 2 | Helium | |
| 10 | Ne | 2 |
| 18 | Ar | 3 |
| 36 | Krypton | 4 |
| 54 | Xenon | 5 |
| 86 | Rn | 6 |
| | Radon | |



ANSWER KEY

Which trends are observed when the elements in **Period 3** on the Periodic Table are considered in order of **increasing atomic number**?

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- C** The atomic radius increases, and the first ionization energy generally increases.
- D** The atomic radius increases, and the first ionization energy generally decreases.

(a)

Which of the following **Period 4** elements has the **most metallic characteristics**?

- A** Ca
- B** Ge
- C** As
- D** Br

(a)

Which element is an **alkali metal**?

- A** Na
- B** Mg
- C** Al
- D** Cl

(a)

In general, atoms of **transition elements** in **Period 5** are characterized by an incomplete

- A** 3p subshell
- B** 4p subshell
- C** 3d subshell
- D** 4d subshell

(d)



PREVIEW

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electrons
D occupied principal energy levels

D lose electrons more readily

Aqueous solutions of compounds containing element X are **blue**.
Element X could be

- A** carbon
- B** copper
- C** sodium
- D** sulfur

(b)

Which element attains the structure of a **noble gas** when it becomes a **1+ ion**?

- A** K
- B** Ca
- C** F
- D** Ne

(a)