

For answers, send email to: [admin@tutor-homework.com](mailto:admin@tutor-homework.com).

**Include file name:** Chemistry\_Worksheet\_0053

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1.

Consider the following electron-dot formulas for the elements X and Y.



What are the group numbers of X and Y?

|            |
|------------|
| A. 16 & 13 |
|------------|

|          |
|----------|
| B. 5 & 4 |
|----------|

|            |
|------------|
| C. 15 & 14 |
|------------|

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2.

Consider the following electron-dot formulas for the elements X and Y.



b. Will a compound of X and Y be ionic or covalent?

|             |
|-------------|
| A. covalent |
|-------------|

|          |
|----------|
| B. ionic |
|----------|

Score: 3/3

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3.

Consider the following electron-dot formulas for the elements X and Y.



What ions would be formed by X and Y?

|             |
|-------------|
| A. +3 & -4  |
| B. -5& +4   |
| C. -3 & + 4 |
| D. +5 & -4  |

Score: 3/3

4.

Consider the following electron-dot formulas for the elements X and Y.



What would be the formula of a compound between X and Y?

|             |
|-------------|
| A. $X_5Y_4$ |
| B. $X_3Y_4$ |
| C. $X_4Y_5$ |
| D. $X_4Y_3$ |

Score: 3/3

5.

Consider the following electron-dot formulas for the elements X and Y.



What would be the formula of a compound of X and Cl?

|              |
|--------------|
| A. $X_3Cl$   |
| B. $X_2Cl_3$ |
| C. $XCl_3$   |
| D. $X_3Cl_2$ |

Score: 3/3

6.

Complete the following table for atoms or ions:

| Atom or Ion     | Number of Protons | Number of Electrons | Electrons Lost/Gained |
|-----------------|-------------------|---------------------|-----------------------|
| Mg <sup>+</sup> | 1.-----           | 2.-----             | 3.----- e 4.-----     |
| 5.-----         | 13                | 11                  | 6.----- e 7.-----     |
| 8.-----         | 8                 | 9.-----             | 2 e gained            |
| 10.-----        | 11.-----          | 28                  | 3 e lost              |

|     |
|-----|
| 1.  |
| 2.  |
| 3.  |
| 4.  |
| 5.  |
| 6.  |
| 7.  |
| 8.  |
| 9.  |
| 10. |
| 11. |

7.

Name the following compound:  $\text{Li}_2\text{O}$

- |                       |
|-----------------------|
| A. lithium (II) oxide |
| B. lithium oxide      |
| C. dilithium oxide    |

Score: 3/3

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**8.**

Name the following compound:  $\text{CF}_2$

- |                         |
|-------------------------|
| A. carbon (II) fluoride |
| B. carbon tetrafluoride |
| C. carbon fluoride      |

**9.**

Name the following compound:  $\text{MgF}_2$

- |                         |
|-------------------------|
| A. magnesium difluoride |
| B. manganese fluoride   |
| C. magnesium fluoride   |

Score: 3/3

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**10.**

Name the following compound:  $\text{CaCl}_2$

- |                          |
|--------------------------|
| A. calcium (II) chloride |
| B. calcium dichloride    |
| C. calcium chloride      |

Score: 3/3

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**11.**

Name the following compound:  $\text{N}_2\text{O}$

- |                        |
|------------------------|
| A. dinitrogen oxide    |
| B. nitrogen dioxide    |
| C. nitrogen (II) oxide |

Score: 3/3

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**12.**

Name the following compound: CO

|                      |
|----------------------|
| A. carbon oxide      |
| B. carbon (II) oxide |
| C. carbon monoxide   |

Score: 3/3

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**13.**

name the following compound:  $K_3PO_4$

|                              |
|------------------------------|
| A. potassium (III) phosphate |
| B. tripotassium phosphate    |
| C. potassium phosphate       |

Score: 3/3

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**14.**

Name the following compound:  $Ba(NO_3)_2$

|                        |
|------------------------|
| A. barium (II) nitrate |
| B. barium nitride      |
| C. barium nitrate      |

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**15.**

Classify each of the following as ionic or covalent

|                |
|----------------|
| $Al_2(CO_3)_3$ |
| $SF_6$         |
| $N_2O$         |
| $Br_2$         |
| $Mg_3N_2$      |
| $SO_2$         |
| $CrPO_4$       |

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**16.**

Select the more polar bond in each of the following pairs:

|                    |
|--------------------|
| (A) C-N or (B) C-O |
|--------------------|

|                     |
|---------------------|
| (A) N-F or (B) N-Br |
|---------------------|

|                       |
|-----------------------|
| (A) Si-S or (B) Si-Cl |
|-----------------------|

|                      |
|----------------------|
| (A) F-Cl or (B) F-Br |
|----------------------|

|                    |
|--------------------|
| (A) P-O or (B) P-S |
|--------------------|

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**17.**

Classify each of the following bonds as nonpolar covalent, polar covalent, or ionic

|     |
|-----|
| N-O |
|-----|

|       |
|-------|
| Cl-Cl |
|-------|

|       |
|-------|
| Na-Cl |
|-------|

|     |
|-----|
| H-H |
|-----|

|     |
|-----|
| N-F |
|-----|

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**18.**

Predict the shape and polarity of each of the following molecules. Assume that all bonds are polar

|  |
|--|
| a central atom with two identical bonded atoms and one lone pair |
|--|

|  |
|--|
| a central atom with three identical bonded atoms and one lone pair |
|--|

|   |
|---|
| a central atom with four identical bonded atoms and no lone pairs |
|---|

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**19.**

Predict the polarity of each of the following molecules:

|                  |
|------------------|
| SCl <sub>2</sub> |
|------------------|

|                  |
|------------------|
| PCl <sub>3</sub> |
|------------------|

|                  |
|------------------|
| GeH <sub>4</sub> |
|------------------|

|                 |
|-----------------|
| CF <sub>4</sub> |
|-----------------|

|                  |
|------------------|
| H <sub>2</sub> O |
|------------------|