

Here are some practice problems for the current material dealing with molar masses. As an extra challenge, could anyone identify the substances below?

Calculate the formula masses for the compounds below.

- |                            |  |                                 |
|----------------------------|--|---------------------------------|
| a) $\text{H}_3\text{PO}_4$ | b) $\text{C}_4\text{H}_{10}$                 | c) $\text{Co}(\text{NO}_3)_2$   |
| 98 amu                     | 58 amu                                       | 183 amu                         |
| d) $\text{FeCl}_3$         | e) $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ | f) $\text{Al}_2(\text{SO}_4)_3$ |
| 161 amu                    | 342 amu                                      | 342 amu                         |

Calculate molar masses for the compounds below.

- |   |  |  |
|---|--|--|
| a) $\text{H}_2\text{O}$                       | b) $\text{H}_2\text{SO}_4$                                     | c) $\text{C}_6\text{H}_{12}\text{O}_6$                       |
| 18 g/mol                                      | 98 g/mol   | 180 g/mol  |
| d) $\text{C}_7\text{H}_8\text{N}_4\text{O}_2$ | e) $(\text{Na})\text{C}_{11}\text{H}_{18}\text{N}_2\text{O}_3$ | f) $(\text{C}_5\text{H}_5\text{N})_4\text{Cu}(\text{NCS})_6$ |
| 180 g/mol                                     | 249 g/mol  | 728 g/mol  |

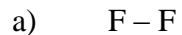
Calculate the mass of the following compounds.

- |                  |                                       |                             |
|------------------|---------------------------------------|-----------------------------|
| a) 1.00 mol NaCl | b) 2.00 mol $\text{MgBr}_2$           | c) 0.50 mol $\text{CCl}_4$  |
| 58 g             | 368 g                                 | 76 g                        |
| d) 3.60 mol NaOH | e) 0.710 mol $\text{Ca}(\text{CN})_2$ | f) 1.82 mol $\text{BaSO}_4$ |
| 144 g            | 65.32 g                               | 424.06 g                    |

Calculate the number of moles of the following compounds.

- |                       |  |                                       |
|-----------------------|--|---------------------------------------|
| a) 88 g $\text{CO}_2$ | b) 198 g $\text{C}_2\text{H}_{12}\text{O}_6$ | c) 65.25 g LiBr                       |
| 2.00 moles            | 1.5 moles                                    | 0.75 moles                            |
| a) 249g NaOH          | b) 878g $\text{NaAlSi}_3\text{O}_8$          | c) 7,327g $\text{Cu}_2\text{FeSnS}_4$ |
| 6.225 moles           | 3.35 moles                                   | 17.00 moles                           |

Classify the following bonds as ionic, polar covalent, or non-polar covalent.



non-polar covalent



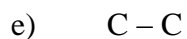
ionic



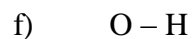
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polar covalent



non-polar covalent



polar covalent



polar covalent



ionic



non-polar covalent

Draw Lewis Dot Structures for the molecules below. You will have to see me about the answers for these.

