

Exercise 7.3a

Formula Mass

Name: _____

Date: _____ Per: _____

Chemists group particles into packages called moles so that they don't have to deal with very large numbers. Similarly, chemists use a special unit of mass so that they don't have to express the mass of individual atoms, ions, and molecules in extremely small numbers of grams. When chemists express the mass of individual particles of matter they use a unit called the atomic mass unit (*u*) or dalton (*Da*). (*The two units mean the same thing.*)

- To find the mass of an individual atom, use the mass from the periodic table (*the unit would be u or Da*).

Example: the mass of 1 hydrogen atom (H) would be 1.008 u.

- To find the mass of a compound, molecule, or ion simply add the masses of all atoms present in the substance together (*the unit would be u or Da*).

*Examples: the mass of 1 molecule of hydrogen (H₂) would be 1.008 u x 2, or 2.016 u.
the mass of NaCl would be 22.990 u + 35.453 u, or 58.443 u.*

DIRECTIONS: For each of the following substances, write the formula and calculate the formula mass.

<u>Name</u>	<u>Formula</u>	<u>Mass</u>	<u>Name</u>	<u>Formula</u>	<u>Mass</u>
1. zinc acetate	_____	_____	16. water	_____	_____
2. copper (I) sulfate	_____	_____	17. cobaltous chloride	_____	_____
3. carbon dioxide	_____	_____	18. sodium hydroxide	_____	_____
4. calcium bicarbonate	_____	_____	19. silicon dioxide	_____	_____
5. carbonic acid	_____	_____	20. magnesium chloride	_____	_____
6. aluminum nitrate	_____	_____	21. diphosphorus pentachloride	_____	_____
7. ammonium sulfate	_____	_____	22. lithium phosphide	_____	_____
8. barium chloride	_____	_____	23. hypochlorous acid	_____	_____
9. iron (II) phosphate	_____	_____	24. potassium carbide	_____	_____
10. dinitrogen pentoxide	_____	_____	25. hydrogen sulfide	_____	_____
11. strontium sulfite	_____	_____	26. chromic oxide	_____	_____
12. hydrochloric acid	_____	_____	27. ammonium dichromate	_____	_____
13. manganese (III) oxide	_____	_____	28. aluminum acetate	_____	_____
14. ammonia	_____	_____	29. barium hydroxide	_____	_____
15. sulfur hexafluoride	_____	_____	30. gold (III) nitrate	_____	_____