1. Given two formulas representing the same compound:	7. Which formula is both a molecular and an empirical formula?
<b>Formula A</b> CH <sub>3</sub> <b>Formula B</b> C <sub>2</sub> H <sub>6</sub> Which statement describes these formulas?	A) C6H12O6       B) C2H4O2         C) C3H8O       D) C4H8
<ul> <li>A) Formulas A and B are both empirical.</li> <li>B) Formulas A and B are both molecular.</li> <li>C) Formula A is empirical, and formula B is molecular.</li> </ul>	8. A compound has a molecular mass of 54 and an empirical formula of C <sub>2</sub> H <sub>3</sub> . What is the molecular formula of the compound?
D) Formula <i>A</i> is molecular, and formula <i>B</i> is empirical.	A) C <sub>2</sub> H <sub>3</sub> B) C <sub>4</sub> H <sub>6</sub> C) C <sub>5</sub> H <sub>8</sub> D) C <sub>6</sub> H <sub>10</sub>
2. What is the empirical formula for a compound with the molecular formula C <sub>6</sub> H <sub>12</sub> Cl <sub>2</sub> O <sub>2</sub> ?	9. A compound has the empirical formula CH <sub>2</sub> O and a gram-formula mass of 60. grams per mole. What is the molecular formula of this compound?
A) CHCIO       B) CH2CIO         C) C3H6CIO       D) C6H12C12O2	A) CH2O       B) C2H4O2         C) C3H8O       D) C4H8O4
3. What is the empirical formula of a compound that has a carbon-to-hydrogen ratio of 2 to 6?	10. A compound has the empirical formula NO <sub>2</sub> . Its molecular formula could be
A) CH <sub>3</sub> B) C <sub>2</sub> H <sub>6</sub> C) C <sub>3</sub> H D) C <sub>6</sub> H <sub>2</sub>	A) NO <sub>2</sub> B) N <sub>2</sub> O C) N <sub>4</sub> O <sub>2</sub> D) N <sub>4</sub> O <sub>4</sub>
4. Which pair consists of a molecular formula and its corresponding empirical formula?	11. The empirical formula of a compound is CH <sub>2</sub> . The molecular formula of this compound could be
A) $C_2 H_2$ and $CH_3 CH_3$ B) $C_6 H_6$ and $C_2H_2$ C) $P_4O_{10}$ and $P_2O_5$	A) CH4 B) C2H2 C) C2H4 D) C2H6
D) SO <sub>2</sub> and SO <sub>3</sub>	12. The gram-formula mass of NO <sub>2</sub> is defined as the mass of
5. Given the structural formula: H H H H I I I I HO-C-C-C-C-OH I I I I H H H H	<ul> <li>A) one mole of NO2</li> <li>B) one molecule of NO2</li> <li>C) two moles of NO</li> <li>D) two molecules of NO</li> </ul>
What is the empirical formula of this compound?	13. What is the gram-formula mass of Ca <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub> ?
A) CH3OB) C2H5OC) C4H10O2D) C8H20O4	A) 248 g/mol       B) 263 g/mol         C) 279 g/mol       D) 310. g/mol
6. Which is an empirical formula?	14. The molar mass of Ba(OH) <sub>2</sub> is
A) CH B) C <sub>2</sub> H <sub>2</sub> C) C <sub>2</sub> H <sub>4</sub> D) C <sub>4</sub> H <sub>8</sub>	A) 154.3 g C) 171.3 g B) 155.3 g D) 308.6 g

<ul> <li>15. The gram-formula mass of (NH4)2CO3 is <ul> <li>A) 46.0 g</li> <li>B) 64.0 g</li> <li>C) 78.0 g</li> <li>D) 96.0 g</li> </ul> </li> <li>22. What is the empirical formula of a compound whose composition by mass is 50.% sulfur and 50.% oxygen? <ul> <li>A) 29 g</li> <li>B) 34 g</li> <li>C) 57 g</li> <li>D) 74 g</li> </ul> </li> <li>34. 2 0 g</li> <li>B) 2 g</li> <li>C) 3 d</li> <li>C) 5 g</li> <li>D) 5</li> <li>A compound has a gram formula mass of 56 grams per mole: What is the molecular formula for this compound? <ul> <li>A) CH2</li> <li>B) C2H4</li> <li>C) C3H6</li> <li>D) C4H8</li> </ul> </li> <li>19. A compound contains 46.7% nitrogen at 53.3% oxygen by mass. What is the empirical formula of the compound? <ul> <li>A) NO</li> <li>B) N2O</li> <li>C) N2O3</li> <li>D) N2O5</li> </ul> </li> <li>20. A compound was analyzed and found to contain 75% carbon and 25% hydrogen by mass. What is the comprical formula? <ul> <li>A) CH</li> <li>B) CH2</li> <li>C) CH3</li> <li>D) CH4</li> </ul> </li> <li>21. What is the empirical formula of a compound consisting of 29.6% oxygen and 70.4% fluorine by mass? <ul> <li>A) OF</li> <li>B) OF2</li> <li>C) O2F</li> <li>D) O2F4</li> </ul> </li> </ul>		
<ul> <li>16. What is the gram formula mass of Ca(OH)2? A) 29 g B) 34 g C) 57 g D) 74 g</li> <li>17. What is the total number of moles of oxygen atoms in mole of N<sub>2</sub>O<sub>3</sub>? A) 1 B) 2 C) 3 D) 5</li> <li>18. A compound has a gram formula mass of 56 grams per mole. What is the molecular formula for this compound? A) CH<sub>2</sub> B) C<sub>2</sub>H<sub>4</sub> C) C<sub>3</sub>H<sub>6</sub> D) C<sub>4</sub>H<sub>8</sub></li> <li>19. A compound contains 46.7% nitrogen and 53.3% oxygen by mass. What is the empirical formula of the compound? A) NO B) N<sub>2</sub>O C) N<sub>2</sub>O<sub>3</sub> D) N<sub>2</sub>O<sub>5</sub></li> <li>20. A compound was analyzed and found to contain 75% carbon and 25% hydrogen by mass. What is the empirical formula? A) CH B) CH<sub>2</sub> C) CH<sub>3</sub> D) CH<sub>4</sub></li> <li>21. What is the empirical formula of a compound consisting of 29.6% oxygen and 70.4% fluorine by mass? A) OF B) OF<sub>2</sub> C) O<sub>2</sub>F D) O<sub>2</sub>F<sub>4</sub></li> <li>23. What is the empirical formula mass of 20.6% oxygen and 70.4% fluorine by mass?</li> <li>24. The percent composition by mass of normal mass of 32.3% oxygen by mass. What is the empirical formula of the compound's analyzed and found to contain 75% carbon and 25% hydrogen by mass. What is the compound consisting of 29.6% oxygen and 70.4% fluorine by mass?</li> <li>25. What is the empirical formula of a compound consisting of 29.6% oxygen and 70.4% fluorine by mass?</li> </ul>	15. The gram-formula mass of (NH4)2CO3 is         A) 46.0 g       B) 64.0 g         C) 78.0 g       D) 96.0 g	<ul><li>22. What is the empirical formula of a compound whose composition by mass is 50.% sulfur and 50.% oxygen?</li><li>A) SO B) SO<sub>2</sub> C) SO<sub>3</sub> D) S<sub>2</sub>O<sub>3</sub></li></ul>
<ul> <li>A) 1 B) 2 C) 3 D) 5</li> <li>A compound has a gram formula mass of 56 grams per mole. What is the molecular formula for this compound?</li> <li>A) CH<sub>2</sub> B) C<sub>2</sub>H<sub>4</sub> C) C<sub>3</sub>H<sub>6</sub> D) C<sub>4</sub>H<sub>8</sub></li> <li>A compound contains 46.7% nitrogen and 53.3% oxygen by mass. What is the empirical formula of the compound?</li> <li>A) NO B) N<sub>2</sub>O C) N<sub>2</sub>O<sub>3</sub> D) N<sub>2</sub>O<sub>5</sub></li> <li>A compound was analyzed and found to contain 75% carbon and 25% hydrogen by mass. What is the compound's empirical formula?</li> <li>A) CH B) CH<sub>2</sub> C) CH<sub>3</sub> D) CH<sub>4</sub></li> <li>What is the empirical formula of a compound consisting of 29.6% oxygen and 70.4% fluorine by mass?</li> <li>A) OF B) OF<sub>2</sub> C) O<sub>2</sub>F D) O<sub>2</sub>F<sub>4</sub></li> </ul>	<ul> <li>16. What is the gram formula mass of Ca(OH)<sub>2</sub>?</li> <li>A) 29 g B) 34 g C) 57 g D) 74 g</li> <li>17. What is the total number of moles of oxygen atoms in 1</li> </ul>	<ul> <li>23. What is the percent composition by mass of nitrogen in NH4NO3 (gram-formula mass = 80.0 grams/mole)?</li> <li>A) 17.5%</li> <li>B) 35.0%</li> <li>C) 52.5%</li> <li>D) 60.0%</li> </ul>
<ul> <li>18. A compound has a gram formula mass of 56 grams per mole. What is the molecular formula for this compound?</li> <li>A) CH<sub>2</sub> B) C<sub>2</sub>H<sub>4</sub> C) C<sub>3</sub>H<sub>6</sub> D) C<sub>4</sub>H<sub>8</sub></li> <li>19. A compound contains 46.7% nitrogen and 53.3% oxygen by mass. What is the empirical formula of the compound?</li> <li>A) NO B) N<sub>2</sub>O C) N<sub>2</sub>O<sub>3</sub> D) N<sub>2</sub>O<sub>5</sub></li> <li>20. A compound was analyzed and found to contain 75% carbon and 25% hydrogen by mass. What is the compound's empirical formula?</li> <li>A) CH B) CH<sub>2</sub> C) CH<sub>3</sub> D) CH<sub>4</sub></li> <li>21. What is the empirical formula of a compound consisting of 29.6% oxygen and 70.4% fluorine by mass?</li> <li>A) OF B) OF<sub>2</sub> C) O<sub>2</sub>F D) O<sub>2</sub>F<sub>4</sub></li> </ul>	mole of N <sub>2</sub> O <sub>3</sub> ? A) 1 B) 2 C) 3 D) 5	24. The percentage by mass of Br in the compound AlBr <sub>3</sub> is closest to
<ul> <li>19. A compound contains 46.7% nitrogen and 53.3% oxygen by mass. What is the empirical formula of the compound?</li> <li>A) NO B) N<sub>2</sub>O C) N<sub>2</sub>O<sub>3</sub> D) N<sub>2</sub>O<sub>5</sub></li> <li>20. A compound was analyzed and found to contain 75% carbon and 25% hydrogen by mass. What is the compound's empirical formula?</li> <li>A) CH B) CH<sub>2</sub> C) CH<sub>3</sub> D) CH<sub>4</sub></li> <li>21. What is the empirical formula of a compound consisting of 29.6% oxygen and 70.4% fluorine by mass?</li> <li>A) OF B) OF<sub>2</sub> C) O<sub>2</sub>F D) O<sub>2</sub>F<sub>4</sub></li> <li>25. C) 20.8% The percent by mass of calcium in the compound calcium sulfate (CaSO<sub>4</sub>) is approximately</li> <li>26. The percent by mass of calcium in the compound calcium sulfate (CaSO<sub>4</sub>) is approximately</li> <li>A) 15% B) 29% C) 34% D) 47%</li> <li>27. What is the percent by mass of oxygen in H<sub>2</sub>SO<sub>4</sub>? [formula mass = 98]</li> <li>A) 16% B) 33% C) 65% D) 98%</li> </ul>	<ul><li>18. A compound has a gram formula mass of 56 grams per mole. What is the molecular formula for this compound?</li><li>A) CH<sub>2</sub> B) C<sub>2</sub>H<sub>4</sub> C) C<sub>3</sub>H<sub>6</sub> D) C<sub>4</sub>H<sub>8</sub></li></ul>	<ul> <li>A) 10.% B) 25% C) 75% D) 90.%</li> <li>25. What is the percent composition by mass of aluminum in Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> (gram-formula mass = 342 grams/mole)?</li> <li>A) 7.89% B) 15.8%</li> <li>C) 20.8% D) 36.0%</li> </ul>
<ul> <li>20. A compound was analyzed and found to contain 75% carbon and 25% hydrogen by mass. What is the compound's empirical formula?</li> <li>A) CH B) CH<sub>2</sub> C) CH<sub>3</sub> D) CH<sub>4</sub></li> <li>21. What is the empirical formula of a compound consisting of 29.6% oxygen and 70.4% fluorine by mass?</li> <li>A) OF B) OF<sub>2</sub> C) O<sub>2</sub>F D) O<sub>2</sub>F<sub>4</sub></li> <li>27. What is the percent by mass of oxygen in H<sub>2</sub>SO<sub>4</sub>? [formula mass = 98]</li> <li>A) 16% B) 33% C) 65% D) 98%</li> </ul>	<ul><li>19. A compound contains 46.7% nitrogen and 53.3% oxygen by mass. What is the empirical formula of the compound?</li><li>A) NO B) N<sub>2</sub>O C) N<sub>2</sub>O<sub>3</sub> D) N<sub>2</sub>O<sub>5</sub></li></ul>	<ul> <li>26. The percent by mass of calcium in the compound calcium sulfate (CaSO<sub>4</sub>) is approximately</li> <li>A) 15% B) 29% C) 34% D) 47%</li> </ul>
<ul> <li>A) CH B) CH<sub>2</sub> C) CH<sub>3</sub> D) CH<sub>4</sub></li> <li>A) 16% B) 33% C) 65% D) 98%</li> <li>A) OF B) OF<sub>2</sub> C) O<sub>2</sub>F D) O<sub>2</sub>F<sub>4</sub></li> </ul>	20. A compound was analyzed and found to contain 75% carbon and 25% hydrogen by mass. What is the compound's empirical formula?	27. What is the percent by mass of oxygen in H <sub>2</sub> SO <sub>4</sub> ? [formula mass = 98]
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