

## Molar Conversions Worksheet

1. How many moles does 80.0 grams of  $\text{H}_2\text{O}$  represent?
2. How many moles does 22.0 grams of  $\text{CO}_2$  represent?
3. What is the mass of 5.0 moles of  $\text{Ba}(\text{CN})_2$ ?
4. What is the mass of 3.5 moles of water?
5. How many molecules are in 0.25 moles of  $\text{CH}_4$ ?
6. How many sodium ions are in 3.0 moles of  $\text{NaCl}$ ?
7. Convert  $3.01 \times 10^{23}$  molecules of  $\text{C}_2\text{H}_6$  to moles.
8. How many moles of glucose do  $1.2 \times 10^{24}$  molecules represent?

9. What would be the mass of  $1.20 \times 10^{24}$  molecules of water?
  
10. How much mass does  $1.51 \times 10^{22}$  atoms of neon represent?
  
11. How many molecules does 36.0 grams of water represent?
  
12. How many atoms does 3.0 grams of carbon represent?
  
13. Calculate the mass of 1.58 moles  $\text{CH}_4$ .
  
14. How many molecules are there in a 0.00583 mole sample of  $\text{H}_2\text{O}$ ?
  
15. How many molecules are in a 35.0 gram sample of  $\text{H}_2\text{O}$ ?
  
16. How many grams are in 4.5 mole lithium oxide ( $\text{Li}_2\text{O}$ )?

17. How many molecules are in 23 moles of oxygen?
  
18. How many moles are in  $3.4 \times 10^{23}$  molecules of sulfuric acid ( $\text{H}_2\text{SO}_4$ )?
  
19. How many molecules are in 25 gram of ammonia ( $\text{NH}_3$ )?
  
20. How many grams are in  $8.2 \times 10^{22}$  molecules of (dinitrogen hexaiodide)  $\text{N}_2\text{I}_6$ ?
  
21. How many moles are in 25g of sodium chloride ( $\text{NaCl}$ )?
  
22. How many moles are in 125g of sulfuric acid ( $\text{H}_2\text{SO}_4$ )?
  
23. How many moles are in 100. g of potassium permanganate ( $\text{KMnO}_4$ )?
  
24. How many moles are in 74g of potassium chloride ( $\text{KCl}$ )?

25. How many moles are in 35g of copper sulfate pentahydrate ( $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ )?
26. How many grams are in 2.5 moles of sodium chloride ( $\text{NaCl}$ )?
27. How many grams are in 0.50 moles of sulfuric acid ( $\text{H}_2\text{SO}_4$ )?
28. How many grams are in 1.7 moles of potassium permanganate ( $\text{KMnO}_4$ )?
29. What is the mass of one mole of  $\text{C}_2\text{H}_6\text{O}$  (ethanol)?
30. Calculate the mass of  $1.02 \times 10^{24}$  molecules of strontium oxide ( $\text{SrO}$ ).