

NAME: _____

BLOCK: _____

DATE: _____

CHEMISTRY: COUNTING ATOMS IN COMPOUNDS WORKSHEET #7.0.1

INSTRUCTIONS: Write the quantity of atoms of each element opposite the formula of the compound for the quantity of formula units and molecules shown:

For example: $5\text{P}_2\text{O}_3$ $\text{P} = \underline{(5 \times 2 =) 10}$ $\text{O} = \underline{(5 \times 3 =) 15}$

For example: $4\text{Zn}(\text{NO}_3)_2$ $\text{Zn} = \underline{(4 \times 1 =) 4}$ $\text{N} = \underline{(4 \times 1 \times 2 =) 8}$ $\text{O} = \underline{(4 \times 3 \times 2 =) 24}$

1. $4\text{K}_2\text{CO}_3$ $\text{K} = \underline{\hspace{1cm}}$ $\text{C} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
2. $2\text{Sr}_3(\text{PO}_4)_2$ $\text{Sr} = \underline{\hspace{1cm}}$ $\text{P} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
3. $3\text{N}_4\text{O}_{10}$ $\text{N} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
4. $2(\text{NH}_4)_3\text{N}$ $\text{N} = \underline{\hspace{1cm}}$ $\text{H} = \underline{\hspace{1cm}}$
5. $8\text{Cl}_2\text{O}$ $\text{Cl} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
6. $\text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2$ $\text{Ca} = \underline{\hspace{1cm}}$ $\text{C} = \underline{\hspace{1cm}}$ $\text{H} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
7. 12NaBr $\text{Na} = \underline{\hspace{1cm}}$ $\text{Br} = \underline{\hspace{1cm}}$
8. $4\text{Al}(\text{OH})_3$ $\text{Al} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$ $\text{H} = \underline{\hspace{1cm}}$
9. 3NaHCO_3 $\text{Na} = \underline{\hspace{1cm}}$ $\text{H} = \underline{\hspace{1cm}}$ $\text{C} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
10. $5\text{Ga}_2(\text{Cr}_2\text{O}_7)_3$ $\text{Ga} = \underline{\hspace{1cm}}$ $\text{Cr} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
11. $7\text{C}_2\text{S}_2$ $\text{C} = \underline{\hspace{1cm}}$ $\text{S} = \underline{\hspace{1cm}}$
12. $4\text{Fe}_2\text{O}_3$ $\text{Fe} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
13. $6\text{Ba}(\text{MnO}_4)_2$ $\text{Ba} = \underline{\hspace{1cm}}$ $\text{Mn} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
14. $3\text{V}_2\text{O}_5$ $\text{V} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
15. 2KNO_3 $\text{K} = \underline{\hspace{1cm}}$ $\text{N} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
16. 9MgSO_4 $\text{Mg} = \underline{\hspace{1cm}}$ $\text{S} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
17. $5\text{Al}_2(\text{SiO}_3)_2$ $\text{Al} = \underline{\hspace{1cm}}$ $\text{Si} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$
18. $4\text{Au}(\text{IO}_3)_3$ $\text{Au} = \underline{\hspace{1cm}}$ $\text{I} = \underline{\hspace{1cm}}$ $\text{O} = \underline{\hspace{1cm}}$

(Continued)

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For example: $5\text{P}_2\text{O}_3$ $\text{P} = (5 \times 2 =) 10$ $\text{O} = (5 \times 3 =) 15$

For example: $4\text{Zn}(\text{NO}_3)_2$ $\text{Zn} = (4 \times 1 =) 4$ $\text{N} = (4 \times 1 \times 2 =) 8$ $\text{O} = (4 \times 3 \times 2 =) 24$

19. 8SnCl_4 $\text{Sn} = \underline{\hspace{2cm}}$ $\text{Cl} = \underline{\hspace{2cm}}$
20. $6\text{Cu}_2\text{SeO}_4$ $\text{Cu} = \underline{\hspace{2cm}}$ $\text{Se} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
21. 3AsBr_3 $\text{As} = \underline{\hspace{2cm}}$ $\text{Br} = \underline{\hspace{2cm}}$
22. $2\text{H}_2\text{SO}_4$ $\text{H} = \underline{\hspace{2cm}}$ $\text{S} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
23. SBr_2 $\text{S} = \underline{\hspace{2cm}}$ $\text{Br} = \underline{\hspace{2cm}}$
24. $4\text{Ca}(\text{OH})_2$ $\text{Ca} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$ $\text{H} = \underline{\hspace{2cm}}$
25. $5\text{Mg}_3(\text{PO}_4)_2$ $\text{Mg} = \underline{\hspace{2cm}}$ $\text{P} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
26. $12\text{H}_2\text{O}$ $\text{H} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
27. $5\text{N}_2\text{O}_4$ $\text{N} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
28. 3ClF $\text{Cl} = \underline{\hspace{2cm}}$ $\text{F} = \underline{\hspace{2cm}}$
29. $7\text{P}_2\text{O}_5$ $\text{P} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
30. 2KrCl_6 $\text{Kr} = \underline{\hspace{2cm}}$ $\text{Cl} = \underline{\hspace{2cm}}$
31. $5\text{Al}(\text{C}_2\text{H}_3\text{O}_2)_2$ $\text{Al} = \underline{\hspace{2cm}}$ $\text{C} = \underline{\hspace{2cm}}$ $\text{H} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
32. $3(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ $\text{N} = \underline{\hspace{2cm}}$ $\text{H} = \underline{\hspace{2cm}}$ $\text{Cr} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
33. $5\text{Fe}_3(\text{PO}_4)_2$ $\text{Fe} = \underline{\hspace{2cm}}$ $\text{P} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
34. $2\text{NH}_4\text{NO}_3$ $\text{N} = \underline{\hspace{2cm}}$ $\text{H} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
35. $5\text{BaC}_4\text{H}_4\text{O}_6$ $\text{Ba} = \underline{\hspace{2cm}}$ $\text{C} = \underline{\hspace{2cm}}$ $\text{H} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
36. $4\text{Cu}(\text{HSO}_3)_2$ $\text{Cu} = \underline{\hspace{2cm}}$ $\text{H} = \underline{\hspace{2cm}}$ $\text{S} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
37. $9\text{Au}(\text{NO}_2)_2$ $\text{Au} = \underline{\hspace{2cm}}$ $\text{N} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
38. $3\text{K}_2\text{ZnO}_2$ $\text{K} = \underline{\hspace{2cm}}$ $\text{Zn} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
39. $3\text{Sr}(\text{MnO}_4)_2$ $\text{Sr} = \underline{\hspace{2cm}}$ $\text{Mn} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$
40. $4\text{Al}_2(\text{CO}_3)_3$ $\text{Al} = \underline{\hspace{2cm}}$ $\text{C} = \underline{\hspace{2cm}}$ $\text{O} = \underline{\hspace{2cm}}$

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1. $4\text{K}_2\text{CO}_3$ $\text{K} = 8$ $\text{C} = 4$ $\text{O} = 12$
2. $2\text{Sr}_3(\text{PO}_4)_2$ $\text{Sr} = 6$ $\text{P} = 4$ $\text{O} = 16$
3. $3\text{N}_4\text{O}_{10}$ $\text{N} = 12$ $\text{O} = 30$
4. $2(\text{NH}_4)_3\text{N}$ $\text{N} = 8$ $\text{H} = 24$
5. $8\text{Cl}_2\text{O}$ $\text{Cl} = 16$ $\text{O} = 8$
6. $\text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2$ $\text{Ca} = 1$ $\text{C} = 4$ $\text{H} = 6$ $\text{O} = 4$
7. 12NaBr $\text{Na} = 12$ $\text{Br} = 12$
8. $4\text{Al}(\text{OH})_3$ $\text{Al} = 4$ $\text{O} = 12$ $\text{H} = 12$
9. 3NaHCO_3 $\text{Na} = 3$ $\text{H} = 3$ $\text{C} = 3$ $\text{O} = 9$
10. $5\text{Ga}_2(\text{Cr}_2\text{O}_7)_3$ $\text{Ga} = 10$ $\text{Cr} = 30$ $\text{O} = 105$
11. $7\text{C}_2\text{S}_2$ $\text{C} = 14$ $\text{S} = 14$
12. $4\text{Fe}_2\text{O}_3$ $\text{Fe} = 8$ $\text{O} = 12$
13. $6\text{Ba}(\text{MnO}_4)_2$ $\text{Ba} = 6$ $\text{Mn} = 12$ $\text{O} = 48$
14. $3\text{V}_2\text{O}_5$ $\text{V} = 6$ $\text{O} = 15$
15. 2KNO_3 $\text{K} = 2$ $\text{N} = 2$ $\text{O} = 6$
16. 9MgSO_4 $\text{Mg} = 9$ $\text{S} = 9$ $\text{O} = 36$
17. $5\text{Al}_2(\text{SiO}_3)_2$ $\text{Al} = 10$ $\text{Si} = 10$ $\text{O} = 30$
18. $4\text{Au}(\text{IO}_3)_3$ $\text{Au} = 4$ $\text{I} = 12$ $\text{O} = 36$

(Continued)

INSTRUCTIONS: Write the quantity of atoms of each element opposite the formula of the compound for the quantity of formula units and molecules shown:

For example: $5P_2O_3$ $P = (5 \times 2 =) 10$ $O = (5 \times 3 =) 15$

For example: $4Zn(NO_3)_2$ $Zn = (4 \times 1 =) 4$ $N = (4 \times 1 \times 2 =) 8$ $O = (4 \times 3 \times 2 =) 24$

- (coefficient) (subscript)
19. $8SnCl_4$ $Sn = 8$ $Cl = 32$
 20. $6Cu_2SeO_4$ $Cu = 12$ $Se = 6$ $O = 24$
 21. $3AsBr_3$ $As = 3$ $Br = 9$
 22. $2H_2SO_4$ $H = 4$ $S = 2$ $O = 8$
 23. SBr_2 $S = 1$ $Br = 2$
 24. $4Ca(OH)_2$ $Ca = 4$ $O = 8$ $H = 8$
 25. $5Mg_3(PO_4)_2$ $Mg = 15$ $P = 10$ $O = 40$
 26. $12H_2O$ $H = 24$ $O = 12$
 27. $5N_2O_4$ $N = 10$ $O = 20$
 28. $3ClF$ $Cl = 3$ $F = 3$
 29. $7P_2O_5$ $P = 14$ $O = 35$
 30. $2KrCl_6$ $Kr = 2$ $Cl = 12$
 31. $5Al(C_2H_3O_2)_2$ $Al = 5$ $C = 20$ $H = 30$ $O = 20$
 32. $3(NH_4)_2Cr_2O_7$ $N = 6$ $H = 24$ $Cr = 6$ $O = 21$
 33. $5Fe_3(PO_4)_2$ $Fe = 15$ $P = 10$ $O = 40$
 34. $2NH_4NO_3$ $N = 4$ $H = 8$ $O = 6$
 35. $5BaC_4H_4O_6$ $Ba = 5$ $C = 20$ $H = 20$ $O = 30$
 36. $4Cu(HSO_3)_2$ $Cu = 4$ $H = 8$ $S = 8$ $O = 24$
 37. $9Au(NO_2)_2$ $Au = 9$ $N = 18$ $O = 36$
 38. $3K_2ZnO_2$ $K = 6$ $Zn = 3$ $O = 6$
 39. $3Sr(MnO_4)_2$ $Sr = 3$ $Mn = 6$ $O = 24$
 40. $4Al_2(CO_3)_3$ $Al = 8$ $C = 12$ $O = 36$

(PO_4)
 $Mg_3(PO_4)_2$