

CHEM1301/Scientific Notation and Sig Fig Practice

1. Convert each of the following into scientific notation.

- | | | |
|---------------------------|-------------------------|--------------------------|
| a) 3427 | b) 0.00456 | c) 123,453 |
| d) 172 | e) 0.000984 | f) 0.502 |
| g) 3100.0×10^2 | h) 0.0114×10^4 | i) 107.2 |
| j) 0.0000455 | k) 2205.2 | l) 30.0×10^{-2} |
| m) 0.982×10^{-3} | n) 0.0473 | o) 650.502 |
| p) 3.03×10^{-1} | q) 20.4×10^5 | r) 1.29 |
| s) 0.00565 | t) 1362205.2 | u) 450.0×10^3 |
| v) 1000×10^{-3} | | |

2. Determine the number of significant figures in each of the following:

- | | | |
|---------------------------|-------------------------|--------------------------|
| a) 3427 | b) 0.00456 | c) 123,453 |
| d) 172 | e) 0.000984 | f) 0.502 |
| g) 3100.0×10^2 | h) 0.0114×10^4 | i) 107.2 |
| j) 0.0000455 | k) 2205.2 | l) 30.0×10^{-2} |
| m) 0.982×10^{-3} | n) 0.0473 | o) 650.502 |
| p) 3.03×10^{-1} | q) 20.4×10^5 | r) 1.29 |
| s) 0.00565 | t) 1362205.2 | u) 450.0×10^3 |
| v) 1000×10^{-3} | w) $546,000 \pm 10$ | x) $546,000 \pm 1000$ |

3. Convert each into decimal form.

- | | | | |
|-----------------------|---------------------------|------------------------|---------------------|
| 1.56×10^4 | 0.56×10^{-2} | 3.69×10^{-2} | 736.9×10^5 |
| 0.00259×10^5 | 0.000459×10^{-1} | 13.69×10^{-2} | 6.9×10^4 |
| 0.00259×10^3 | 0.0209×10^{-3} | | |

4. Calculate the following. Give the answer in correct scientific notation.

- | | |
|---|---|
| a) 4.53×10^5
+ 2.2×10^6 | b) 1913.0
- 4.6×10^3 |
| c) 2.34×10^{24}
+ 1.92×10^{23} | d) 2.130×10^3
- 6.6×10^2 |

a) 2.34×10^{65}
 $+ 9.2 \times 10^{66}$

b) 313.0
 $- 1.2 \times 10^3$

9. Calculate the following. Give the answer in correct scientific notation.

a) $8.95 \times 10^{76} / 1.25 \times 10^{56}$

b) $(4.5 \times 10^{29})(2.45 \times 10^{100})$

10. Give the number of significant figures in each of the following.

a) 1.05 g _____

b) 0.0003040 mm _____

c) 29000 ± 10 ft _____

d) 0.90×10^{45} L _____

e) the number of eggs (12) that make up a dozen _____

11. Determine the answer for each of the following. Be sure to use the correct number of significant figures.

a) 17.34
 4.900
 $+ 23.1$

b) 9.80
 $- 4.762$

c) $3.9 \times 6.05 \times 420 =$ d) $14.1 / 5 =$

12. Round each of the following to 3 significant figures.

77.0653 _____ 6,300,178.2 _____

0.00023350 _____ 10.2030 _____

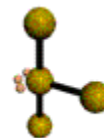
2.895×10^{21} _____

13. Give the number of significant figures in each of the following.

a) 10.0005 g _____

b) 0.003423 mm _____

c) 2900 ± 100 ft _____



d) 8.9×10^5 L _____

e) the number of minutes (60) that make up an hour _____

14. Determine the answer for each of the following. Be sure to use the correct number of significant figures.

a) 27.34	b) 2.8023
6.90	- 4.762
+ 13.124	

c) $0.32 \times 14.50 \times 120 =$ d) $24.1 / 0.005 =$

15. Round each of the following to 3 significant figures.

707.5 _____ 2,300.2 _____

0.0003350 _____ 10.26730 _____

18.95×10^{21} _____

16. Convert each of the following into correct scientific notation.

1747 _____

0.00000984 _____

3200.0×10^2 _____

0.002014×10^2 _____

25600000000000000 _____ (use 4 sig. fig. for the last one only)

17. Calculate the following using the correct number of significant figures.

a) 2.34×10^{47}	b) 9132.0
+ 9.2×10^{46}	- 1.6×10^3

18. Calculate the following using the correct number of significant figures.

a) $(1.54 \times 10^{58})(3.5 \times 10^{60})$

b) $(7.9 \times 10^{34}) / (8.32 \times 10^{23})$