

Chemistry 120
Significant Figures Worksheet

For each of the following, fill in the blank with the appropriate answer to the correct number of significant figures. In multi-step problems, show the non-significant figures you are carrying forward by one of the methods shown in class. Answers are given at the end of this worksheet.

1.
$$\begin{array}{r} 134.991 \\ + 42.11 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 134.991 \\ - 42.11 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 134.991 \\ \times 42.11 \\ \hline \end{array}$$

4.
$$\frac{134.991}{42.11} =$$

5.
$$\begin{array}{r} 1.37 \times 10^{-3} \\ + 5.89 \times 10^{-5} \\ \hline \end{array}$$

6.
$$\begin{array}{r} 1.37 \times 10^{-3} \\ - 5.89 \times 10^{-5} \\ \hline \end{array}$$

7.
$$\begin{array}{r} 1.37 \times 10^{-3} \\ \times 5.89 \times 10^{-5} \\ \hline \end{array}$$

8.
$$\frac{1.37 \times 10^{-3}}{5.89 \times 10^{-5}} =$$

9.
$$\frac{(888.300 + 31.019)}{1.344 \times 10^4} = \frac{\quad}{1.344 \times 10^4} =$$

10.
$$\frac{e\sqrt{2.00}}{p} = \frac{e \times \quad}{p} =$$

11.
$$\frac{(3.03 \times 10^{-8} - 3.019 \times 10^{-9})}{1.4004 \times 10^4} = \frac{\quad}{1.4004 \times 10^4} =$$

12.
$$\frac{136000. \times 0.000322 \times 273.15}{0.082 \times 4200. \times 129.2} =$$

13.
$$63.54 \left(\frac{3.22 \times 10^{24}}{6.022 \times 10^{23}} \right) =$$

14.
$$\sqrt{\frac{(0.0158 + 1.003)}{1.777 \times 10^{-3}}} = \sqrt{\frac{\quad}{1.777 \times 10^{-3}}} =$$

Answers

1. 177.10

2. 92.88

3. 5684. *or* 5.684×10^3

4. 3.206

5. 0.00143 *or* 1.43×10^{-3}

6. 0.00131 *or* 1.31×10^{-3}

7. 8.07×10^{-8}

8. 2.33×10^1 *or* 23.3

9. $\frac{(888.300 + 31.019)}{1.344 \times 10^4} = \frac{919.319}{1.344 \times 10^4} = 6.840 \times 10^{-2}$

10. $\frac{e\sqrt{2.00}}{p} = \frac{e \times 1.41_{421}}{p} = \frac{3.84_{423}}{p} = 1.22$

11. $\frac{(3.03 \times 10^{-8} - 3.019 \times 10^{-9})}{1.4004 \times 10^4} = \frac{2.72_{81} \times 10^{-8}}{1.4004 \times 10^4} = 1.95 \times 10^{-12}$

12. $\frac{136000. \times 0.000322 \times 273.15}{0.082 \times 4200. \times 129.2} = \frac{1.19_{618} \times 10^4}{4.4_{496} \times 10^4} = 0.27$

13. $63.54 \left(\frac{3.22 \times 10^{24}}{6.022 \times 10^{23}} \right) = 63.54(5.34_{706}) = 340. \text{ or } 3.40 \times 10^2$

14. $\sqrt{\frac{(0.0158 + 1.003)}{1.777 \times 10^{-3}}} = \sqrt{\frac{1.018_8}{1.777 \times 10^{-3}}} = \sqrt{573.3_{258}} = 23.94$