

SCIENTIFIC MEASUREMENT REVIEW

(Honors Chemistry)

A. Convert into Scientific Notation. (Make sure you have the correct coefficient!)

- | | |
|----------------------------------------------------------|---------------------------------------------------------|
| 1. 163.7 <u>1.637×10^2</u> | 6. 8960 <u>8.96×10^3</u> |
| 2. 2800 <u>2.8×10^3</u> | 7. 0.00036 <u>3.6×10^{-4}</u> |
| 3. 0.32584 <u>3.2584×10^{-1}</u> | 8. 157.03 <u>1.5703×10^2</u> |
| 4. 25 000 000 000 <u>2.5×10^{10}</u> | 9. .0000002924 <u>2.924×10^{-7}</u> |
| 5. 0.000365 <u>3.65×10^{-4}</u> | 10. 88 502 000 <u>8.8502×10^7</u> |

B. Convert into expanded form. (Make sure you move the decimal in the right direction!)

- | | |
|----------------------------------------------|-------------------------------------------|
| 1. 2.08×10^5 <u>208 000</u> | 6. 3.90×10^3 <u>3900</u> |
| 2. 6.89×10^{-2} <u>.0689</u> | 7. 8.6×10^{-4} <u>.00086</u> |
| 3. 1.7×10^{-1} <u>.17</u> | 8. 9.9×10^3 <u>9900</u> |
| 4. 3.58×10^4 <u>35800</u> | 9. 1.6778×10^{-2} <u>.016778</u> |
| 5. 8.255×10^{-7} <u>.0000008255</u> | 10. 9.330×10^6 <u>9330 000</u> |

C. How many significant digits in the following numbers.

- | | |
|------------------------|-----------------------------------|
| 1. 133.0 <u>4</u> | 6. 0.030034 <u>5</u> |
| 2. 0.0000009 <u>1</u> | 7. 1.67×10^{10} <u>3</u> |
| 3. 80 000 000 <u>1</u> | 8. 0.001007 <u>4</u> |
| 4. 402.061 <u>6</u> | 9. 165.0000 <u>7</u> |
| 5. 333.000 <u>6</u> | 10. 122 000 000 <u>3</u> |

D. Perform the calculations and round into proper scientific notation.

- The answer MUST be in scientific notation and rounded properly.

1. $(1.40 \times 10^4) \div (9.20 \times 10^2) = \underline{1.52 \times 10^1}$

11. $(6.40 \times 10^4) \div (3.20 \times 10^2) = \underline{2.00 \times 10^2}$

2. $(1.33 \times 10^4) \times (9 \times 10^2) = \underline{1 \times 10^{-1}}$

12. $(4.42 \times 10^{-3}) \times (4 \times 10^{-2}) = \underline{2 \times 10^{-4}}$

3. $(1.67 \times 10^4) + (1.22 \times 10^3) = \underline{1.79 \times 10^4}$

13. $(3.8 \times 10^5) + (7.98 \times 10^3) = \underline{3.9 \times 10^5}$

4. $(7.83 \times 10^{-3}) - (1.26 \times 10^{-4}) = \underline{7.70 \times 10^{-3}}$

14. $(7.8350 \times 10^{-2}) - (2.20 \times 10^{-3}) = \underline{7.62 \times 10^{-2}}$

5. $(1.26 \times 10^{-3}) \div (3.2 \times 10^{-5}) = \underline{3.9 \times 10^1}$

15. $(2 \times 10^{-3}) + (8.0 \times 10^{-4}) = \underline{3 \times 10^{-3}}$

6. $(1.85 \times 10^5) \times (1.60 \times 10^2) = \underline{2.96 \times 10^7}$

16. $(7.10 \times 10^4) \div (3.55 \times 10^2) = \underline{2.00 \times 10^2}$

7. $(2.1 \times 10^9) + (1.33 \times 10^8) = \underline{2.2 \times 10^9}$

17. $(7.600 \times 10^{-5}) \times (3.0 \times 10^{-4}) = \underline{2.3 \times 10^{-8}}$

8. $(3.54 \times 10^5) - (1.66 \times 10^4) = \underline{3.37 \times 10^5}$

18. $(5.0 \times 10^6) + (4.4444 \times 10^7) = \underline{4.9 \times 10^7}$

9. $(8.33 \times 10^2) \times (1.37 \times 10^5) = \underline{1.14 \times 10^8}$

19. $(2.7 \times 10^{-5}) - (6.525 \times 10^{-9}) = \underline{2.7 \times 10^{-5}}$

10. $(1.12 \times 10^2) + (1.76 \times 10^3) = \underline{1.87 \times 10^3}$

20. $(6 \times 10^{-3}) \times (8.333 \times 10^{-2}) = \underline{5 \times 10^{-4}}$