

1.2 SIGNIFICANT FIGURES & SIGNIFICANT ZEROS

Dead Babies: _____

In chemistry we don't deal with numbers, we deal with _____.

A QUANTITY contains both a _____ and an _____.

In dealing with measurements only some number matters, these are called significant figures.

SIGNIFICANT FIGURES include all the _____ values and _____ value. Circle the known values and underline the unknown values in the quantities below:

7.6 cm

2.34 cm

15 cm

More significant figures means more _____.

When counting significant figures, all non-zero numbers (1,2,3,4,5,6,7,8,9) are ALWAYS SIGNIFICANT. Zeros can be significant or not significant so they can be tricky.

Rules for significant zeros:

Determine the number of significant digits in each of the following:

- | | | | | | |
|-----|---------|-------|-----|--------|-------|
| 1. | 0.02 | _____ | 11. | 142 | _____ |
| 2. | 0.020 | _____ | 12. | 0.073 | _____ |
| 3. | 501 | _____ | 13. | 1.071 | _____ |
| 4. | 501.0 | _____ | 14. | 10810 | _____ |
| 5. | 5000 | _____ | 15. | 5.00 | _____ |
| 6. | 5000. | _____ | 16. | 55.320 | _____ |
| 7. | 6051.00 | _____ | 17. | 1.010 | _____ |
| 8. | 0.0005 | _____ | 18. | 154 | _____ |
| 9. | 0.1020 | _____ | 19. | 8710 | _____ |
| 10. | 10001 | _____ | 20. | 1.0004 | _____ |

HOMEWORK: Significant Figures and Significant Zeros

Give the number of significant figures in each.

____ 1. 967

____ 6. 2.700

____ 11. 0.0076009

____ 2. 967,000

____ 7. 304

____ 12. 670,000

____ 3. 9.67

____ 8. 9.

____ 13. 0.00872

____ 4. 0.00967

____ 9. 90

____ 14. 1.23

____ 5. 4050

____ 10. 7.805

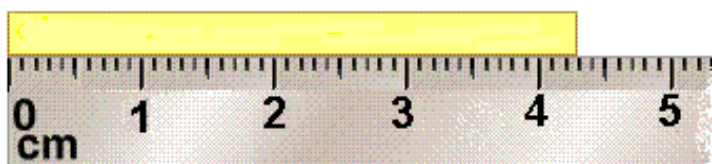
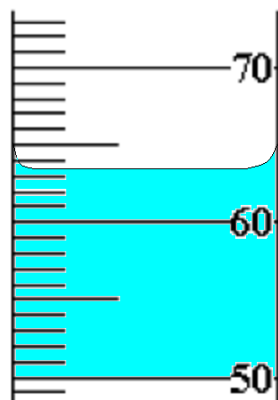
____ 15. 1000

Record the following measurements to the correct number of significant figures.

16. _____

17. _____

18. _____



Determine if the following set of data is accurate and/or precise and **EXPLAIN** why it is or isn't.

True Value	Measurement 1	Measurement 2	Measurement 3	Measurement 4
123.4 cm	194.2 cm	189.9 cm	190.3 cm	193.4 cm

19. The previous data _____ accurate because _____.
(is / is not)

20. The previous data _____ precise because _____.
(is / is not)

Circle the zeros that are significant in the following numbers. Underline the estimated number.

21. 120 in

22. 120.0 in

23. 0.012 in

24. 0.0120 in

25. 120. in