

# SIGNIFICANT FIGURES

Name \_\_\_\_\_

of a measurement can only be as accurate and precise as the instrument that produced it.  
A scientist must be able to express the accuracy of a number, not just its numerical value.  
We can determine the accuracy of a number by the number of significant figures it contains.  
er.

- 1) All digits 1-9 inclusive are significant.  
Example: 129 has 3 significant figures.
- 2) Zeros between significant digits are always significant.  
Example: 5,007 has 4 significant figures.
- 3) Trailing zeros in a number are significant only if the number contains a decimal point.  
Example: 100.0 has 4 significant figures.  
100 has 1 significant figure.
- 4) Zeros in the beginning of a number whose only function is to place the decimal point are not significant.  
Example: 0.0025 has 2 significant figures.
- 5) Zeros following a decimal significant figure are significant.  
Example: 0.000470 has 3 significant figures.  
0.47000 has 5 significant figures.

Determine the number of significant figures in the following numbers.

- |                |                   |
|----------------|-------------------|
| 1. 0.02 _____  | 6. 5,000. _____   |
| 2. 0.020 _____ | 7. 6,051.00 _____ |
| 3. 501 _____   | 8. 0.0005 _____   |
| 4. 501.0 _____ | 9. 0.1020 _____   |
| 5. 5,000 _____ | 10. 10,001 _____  |

Determine the location of the last significant place value by placing a bar over the digit.  
Example: 1.700̄)

- |                              |                                |
|------------------------------|--------------------------------|
| 1. 8040 _____                | 6. 90,100 _____                |
| 2. 0.0300 _____              | 7. $4.7 \times 10^{-8}$ _____  |
| 3. 699.5 _____               | 8. 10,800,000. _____           |
| 4. $2.000 \times 10^2$ _____ | 9. $3.01 \times 10^{21}$ _____ |
| 5. 0.90100 _____             | 10. 0.000410 _____             |

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Significant Figures

### Addition and Subtraction

Complete the following problems and round to the correct number of significant figures.

1.  $35.6 + 56.27$  = \_\_\_\_\_
2.  $4.337 + 84.7128$  = \_\_\_\_\_
3.  $6.2 + 4.114$  = \_\_\_\_\_
4.  $7.331 + 12.42$  = \_\_\_\_\_
5.  $22.5285 + 22.14 + 4.266$  = \_\_\_\_\_
6.  $88.489 + 7.133 + 6.5$  = \_\_\_\_\_
7.  $48.835 - 9.1$  = \_\_\_\_\_
8.  $16.221 - 8.28$  = \_\_\_\_\_
9.  $101.12 - 98.7$  = \_\_\_\_\_
10.  $13.7 + 25.466$  = \_\_\_\_\_
11.  $45.758 - 33.22$  = \_\_\_\_\_
12.  $19.6 - 8.77$  = \_\_\_\_\_
13.  $23 + 16.4 + 22.0$  = \_\_\_\_\_
14.  $24.5764 - 1.9833$  = \_\_\_\_\_
15.  $8.31 + 7.2 + 9.4626$  = \_\_\_\_\_
16.  $3.94 + 68.77 + 83.197$  = \_\_\_\_\_
17.  $12.484 + 3.6$  = \_\_\_\_\_
18.  $19.117 - 8.11$  = \_\_\_\_\_
19.  $7.6924 + 9.6 - 4.888$  = \_\_\_\_\_
20.  $19.8 - 8.75 + 11$  = \_\_\_\_\_

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Significant Figures

### Multiplication and Division

Complete the following problems and round to the correct number of significant figures.

1.  $6 \times 0.30$  = \_\_\_\_\_
2.  $0.03 \times 7 \times 210$  = \_\_\_\_\_
3.  $11.6 \times 6.24$  = \_\_\_\_\_
4.  $0.004 \times 5280$  = \_\_\_\_\_
5.  $500.55 \div 5.11$  = \_\_\_\_\_
6.  $1000 \div 8.2$  = \_\_\_\_\_
7.  $51.6 \times 31.4$  = \_\_\_\_\_
8.  $8088 \times 0.4$  = \_\_\_\_\_
9.  $204.17 \div 3.2$  = \_\_\_\_\_
10.  $31.2 \times 4.1$  = \_\_\_\_\_
11.  $8000 \div 9.7$  = \_\_\_\_\_
12.  $35.45 \times 6.1$  = \_\_\_\_\_
13.  $1.1 \times 3.25$  = \_\_\_\_\_
14.  $1000 \div 19.7$  = \_\_\_\_\_
15.  $10.0 \times 0.02$  = \_\_\_\_\_
16.  $6848 \div 2.4$  = \_\_\_\_\_
17.  $3.3 \times 2.7$  = \_\_\_\_\_
18.  $31.66 \div 0.02$  = \_\_\_\_\_
19.  $9.66 \div 0.33$  = \_\_\_\_\_
20.  $12.4 \times 12.8 \times 16$  = \_\_\_\_\_