

# Introduction to Chemical Math

## FIGURING OUT SIGNIFICANT FIGURES

Significant figures include all known digits plus one estimated digit. In the examples given below, the correct number of significant figures has been given for each number. You must determine the rule that was used for each set. Once a rule is determined, it is applicable to all other sets. It is important to do each set in order.

### Set 1

Number	# of Significant Figures	Rule 1
3.2	2	
678	3	
46.5	3	
.4	1	

### Set 2

Number	# of Significant Figures	Rule 2
302	3	
1004	4	
40.03	4	
.902	3	

### Set 3

Number	# of Significant Figures	Rule 3
.3020	4	
.100	3	
76.4000	6	
40.300	5	
1.0000	5	

### Set 4

Number	# of Significant Figures	Rule 4
014.2	3	
00302.4	4	
.0034	2	
0.000140	3	
0.04	1	
.05005	4	

## Set 5

Number	# of Significant Figures	Rule 5
20400	3	
45000	2	
60	1	

Using the rules you wrote, determine the number of significant figures for each of the following numbers. Give all the rules which must be used to determine the correct number of significant figures.

	Number	# of sig figs	Rule
1	431800		
2	10240		
3	1.035		
4	.0043		
5	0.00542		
6	0.008910		
7	9040		
8	.00403		
9	483		
10	$1.21 \times 10^{-4}$		
11	.00321		
12	9.91		
13	2400000		
14	5.020		
15	.0298		
16	400		
17	50.		
18	500		
19	2980		
20	$5.0 \times 10^{12}$		