Name _____ Regents Chemistry
Chapter 1

Significant Figures

Significant figures are the digits in any measurement that are known with certainty plus one digit that is uncertain.

Rule 1: In numbers that do not contain zeros, all the digits are significant.

3.1428	[5]
3.14	[3]
469	[3]

Rule 2: All zeros between significant digits are significant.

7.053	[4]
7053	[4]
302	[3]

Rule 3: Zeros to the left of the first nonzero digits serve only to fix the position of the decimal point and are not significant.

0.0056	[2]
0.0789	[3]
0.000001	[1]

Rule 4: In a number with digits to the right of a decimal point, zeros to the right of the last nonzero digit are significant.

43	[2]
43.0	[3]
43.00	[4]
0.00200	[3]
0.40050	[5]

Rule 5: In a number that has no decimal point, and that ends in zeros (such as 3600), the zeros at the end may or may not be significant (it is ambiguous). To avoid ambiguity express the number in scientific notation showing in the coefficient the number of significant digits.

3.6×10^3 contains two significant digits

Practice: How many significant digits are in each of the following numbers?

5.40		1.2×10^3	
210		0.00120	
801.5		0.0102	
1,000		9.010×10^{-6}	
101.0100		2,370.0	

1837		205.8	
3.14145×10^4		1900	
6005		1200.43	
0.08206		6000	
0.000014		632	
149356		14.163000	
8.7300		14.000	
0.00743		302400.00	
302400		0.0019872	
8.732		20000	
14.000		426.1	
19.7342		60.0	

Convert the following into proper scientific notation and state the number of significant figures in each number.

Number	# of Sig Figs	Scientific Notation
1) 5.40	_____	_____
2) 210	_____	_____
3) 801.5	_____	_____
4) 1,000	_____	_____
5) 101.0100	_____	_____
6) 1.2×10^{3}	_____	_____
7) 0.00120	_____	_____
8) 9.010×10^{-6}	_____	_____
9) 2,370.0	_____	_____
10) 154.510×10^{3}	_____	_____

Convert the following out of proper scientific notation and state the number of significant figures in each number.

SN	# of Sig Figs	Number
11) 2.5×10^{-4}	_____	_____
12) 7.07×10^{4}	_____	_____
13) 3.450×10^{-6}	_____	_____
14) 8×10^{1}	_____	_____