

# 000 Significant Figures – Rules 1

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Significant figures are critical when reporting scientific data because they give the reader an idea of how well you could actually measure/report your data. Before looking at a few examples, let's summarize the rules for significant figures.

- 1) ALL non-zero numbers are ALWAYS significant.  
e.g. 1,2,3,4,5,6,7,8,9 = 9 sig figs (*all the numbers are significant*)
- 2) ALL zeroes between two significant digits are ALWAYS significant.  
e.g. 1001 = 4 sig fig (*all the zeros are significant*)
- 3) ALL zeroes which are SIMULTANEOUSLY to the right of the decimal point AND at the end of the number are ALWAYS significant.  
e.g. 1.0 = 2 figs (*the zero is significant*)  
e.g. 1.000 = 4 sig figs (*all the zeros are significant*)
- 4) ALL zeroes which are to the left of a written decimal point and are in a number are ALWAYS significant.  
e.g. 100. = 3 sig figs (*all the zeros are significant*)

A helpful way to check rules 3 and 4 is to write the number in scientific notation. If you can/must get rid of the zeroes, then they are NOT significant.

Examples: How many significant figures are present in the following numbers?

Number	# Significant Figures	Rule(s)
48,923	5	1
3.967	4	1
900.06	5	1,2,4
0.0004 (= 4 E-4)	1	1,4
8.1000	5	1,3
501.040	6	1,2,3,4
3,000,000 (= 3 E+6)	1	1
10.0 (= 1.00 E+1)	3	1,3,4