significant figures

significant figures: numbers that you know and digits/numbers you have to estimate

5 Rules:

Any non-zero numbers are sigfigs
ex): 17 → 2 sigfigs
5631.54 → 6 sigfigs

Any zeros in between 2 non-zeros are sigfigs
ex): 101 → 3 sigfigs
2000009 → 7 sigfigs

Any zeros before non-zeros are NOT sigfigs
ex): 0.5 → 1 sigfigs
0.0001305 → 4 sigfigs

Any zeros after nonzeros in a number without a decimal ARE NOT sigfigs
ex): 500 → 1 sigfig
10,000 → 1 sigfig

Any zeros after nonzeros in a number with a decimal ARE sigfigs
ex): 500.0 → 4 sigfigs
0.0310 → 3 sigfigs
0.0103450030 → 9 sigfigs

★ sandwiched zeros count since it's between a number & a trailing zero

exponent → are significant so any numbers put in front are significant
ex): 1.230×10^4 → 4 sigfigs

rounding → 5 or greater = round up
ex): 7.2 6 8
1 2 3 4

first sigfig: 7
second sigfig: 7.3

ex): 0.0076 02
1 2 3 4
.0076 0