Algebra II

5-3
Scientific Notation
and
Significant Figures

7,342,180,000,000,000,000,000

7.34218×10^{21}

How many significant digits are in each?

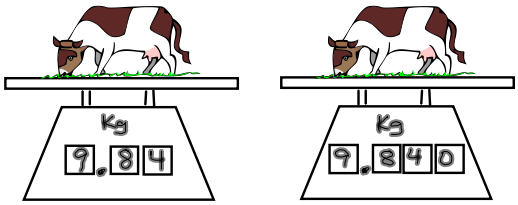
75 → 2
602 → 3
190 → 2
5070 → 3
800.060 → 5
1,000,000 → 1
0.073 → 2
0.0703 → 3
0.0730 → 3
10.00080 → 7
0.060000 → 5

Significant Digits

Rules for Significant Digits

1) All non-zero digits are significant.
2) All zeros between significant digits are significant.
3) A zero to the far-right of the decimal is significant

Why do we need significant digits?



could be 9.835 to 9.844

Proper form for scientific notation.

$1 \le n < 10$

5.420×10^{7}

all these are significant

Exercises:

Write the following in scientific notation.

1) 635,000 → 6.35×10^{5}

2) 0.0000480 → 4.80×10^{-5}

Write the following in standard notation.

3) 9.870×10^{8} → 987000000.

4) 1.92×10^{-3} → 0.00192

Assignment:

Pg. 223
1-24 all
28 -31 all