

Significant Figures Addition rules

1. Determine the number of sig figs in the following examples:

- | | |
|-----------------------------------|----------------------------------|
| a) 409.10 5 | m) 0 450 3 |
| b) 305 3 | n) 45 0 2 |
| c) 0.25 2 | o) 15.0 3 |
| d) 0.4020 4 | p) 5 500 3 |
| e) 0.00056030 5 | q) 1 001 4 |
| f) 371 883 6 | r) 10 000 5 |
| g) 308 000 3 | s) 100 010 6 |
| h) 125.00 5 | t) 0.050 2 |
| i) 2.0×10^2 2 | u) 15.050 5 |
| j) 59.98 4 | v) 35 050 4 |
| k) 50 55 0 4 | w) 0.000 400 3 |
| l) 5.50×10^4 3 | x) 1 4000 4 |

Rules for Addition and Subtraction

- Answers must be rounded to the **same decimal place** (not sig figs) as the **least** number of decimal places in any of the numbers being added or subtracted.

Ex. $2.42 + 14.2 + 0.5642 = 17.2842$ becomes **17.3**

Handwritten notes: "7 tenths" under 17.2842, "looking at sig fig place value decimals" on the right.

- If there is no decimal point in one of the numbers, all decimal points are dropped.

Having many insignificant zero's and addition

The addition rule says that we must round to the least precise decimal place. You cannot be more precise than your least precise number. This is true for any additions that end in non sig. zero's.

- $5\ 500 + 15 = 5\ 515$ but becomes **5500**
 - $310 + 6 = 316$ but becomes **320**
 - $259\ 500 + 1670 + 23 = 261\ 193$ but becomes **261 200**
 - $136.2 + 2\ 500\ 000 + 14.01 = 2\ 500\ 136.21$ but becomes **2 500 000**
- Handwritten notes: Green arrows point to the least precise decimal place in each example. In the last example, a blue 'X' is over the 136.21 and a blue arrow points to the 000 in 2 500 000. A green arrow points to the 000 in 2 500 000.*

Practice

a) $300 + 420 = \underline{720} \downarrow 700$

b) $18.56 + 560 = \underline{578.56} \uparrow 580$

c) $120000 + 145100 = \underline{265100} \uparrow 270000$

d) $125.00 + 84 + 209$

e) $650 + 187 = 837 = 840$

f) $175.0 + 150.68 = \underline{325.68} = 325.7$

g) $113.21 - 6.67 + 162 = \underline{122.74} \uparrow 122.7$

h) $0.0040 + 0.0030 + 0.055 = \underline{0.062}$

i) $15.0 - 6.5 + 45 = \underline{53.5} = 54$