

Significant Figures Addition rules

Review:

Determine the number of sig figs in the following examples:

a) 409.10 ⁵

m) 0.00450 ³

b) 305 ³

n) 4 500 ²

c) 0.25 ²

o) 15.0 ³

d) 0.4020 ⁴

p) 0.500 ³

e) 0.00056030 ⁵

q) 1 001 ⁴

f) 371 883 ⁶

r) 10 000 ¹

g) 308 000 ³

s) 100 010 ⁵

h) 125.00 ⁵

t) 0.060 ²

i) 2.0×10^2 ²

u) 15.0500 ⁶

j) 59.98 ⁴

v) 35 050 ⁴

k) 50 550 ⁴

w) 0.00400 ³

l) 5.50×10^4 ³

x) 0.4000 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.
- If there is no decimal point in one of the numbers, all decimal points are dropped.

Ex. $2.42 + 14.2 + 0.6642 = 17.2842$ becomes 17.3

$0.5 + 4.67 - 2.21 = 2.96$ becomes 3.0

$15.5 + 5.678 + 12 = 33.178$ becomes 33

Having many insignificant zero's and addition-worst rule ever!

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. When you have added or subtracted, if one of the place values is an insignificant zero, it must remain an insignificant zero in the answer.

$$1) \quad 5 \overset{\downarrow}{5}00 + 15 = 55 \overset{\downarrow}{1}5 \text{ but becomes } 55\overset{\downarrow}{0}0$$

$$2) \quad 3\overset{\downarrow}{1}0 + 6 = 3\overset{\downarrow}{1}6 \text{ but becomes } 3\overset{\downarrow}{2}0$$

$$3) \quad 259 \overset{\downarrow}{5}00 + 1670 + 23 = 261 \overset{\downarrow}{1}93 \text{ but becomes } 261\overset{\downarrow}{2}00$$

$$4) \quad 136.2 + 2 \overset{\downarrow}{5}00 \overset{\downarrow}{0}00 + 14.01 = 2 \overset{\downarrow}{5}00 \overset{\downarrow}{1}50 \text{ but becomes } 2 \overset{\downarrow}{5}00 \overset{\downarrow}{0}00$$

Practice

a) $300 + 420 = 720 = 700$

b) $18.56 + 560 = 576.56 = 580$

c) $120\,000 + 145\,100 = 265\,100 = 270\,000$

d) $125.00 + 84 = 209 = 209$

e) $4.5 + 12.324 = 16.824 = 16.8$

f) $650 + 187 = 837 = 840$

g) $175.0 + 150.68 = 325.68 = 325.7$

h) $113.21 - 6.67 + 16.2 = 122.74 = 122.7$

i) $25.4 - 2.5 = 22.9 = 22.9$

h) $0.0040 + 0.0030 + 0.055 = 0.062 = 0.062$

j) $15.0 - 6.5 + 45 = 53.5 = 54$

k) $12.5 + 1.2 = 13.7 = 13.7$

l) $1\,500 + 2200 + 75 = 3775 = 3800$

m) $1\,003 + 130 + 1200 = 2333 = 2300$