GENERAL CHEMISTRY STANDARD 1.10

1.10: Add and subtract numbers maintaining the precision of the measurement

ADDING/SUBTRACTING SIGNIFICANT FIGURES

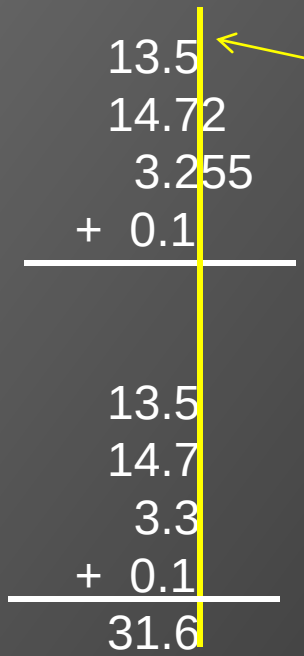
- The same rules exist for adding and subtracting significant figures
- Remember to keep final answer to the same level of precision as the least precise measurement
  - Addition/subtraction can not change the precision of the measurement
  - Round all more precise measurements to the same precision as the least precise measurement
  - The number of significant figures MAY change, but the level of precision can't

ADD/SUBTRACT EXAMPLES

Add the following measurements together using significant figures:

13.5 m 14.72 m 3.255 m 0.1 m

First, line up all of the measurements keeping the columns consistent:



Place a vertical line immediately to the right of the rightmost significant digit in the least precise measurement

Round all numbers that are more precise than the least precise measurement as all digits to the right of the line are not significant

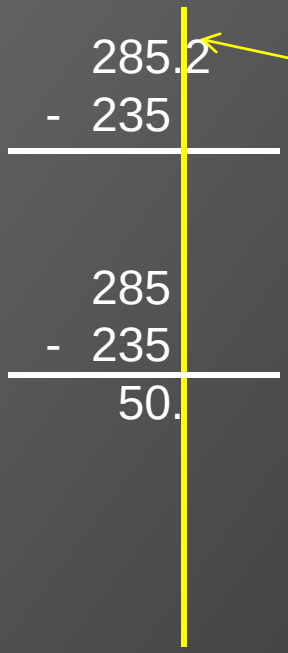
The least precise measurement was only precise to the tenths place, so the answer can only be precise to the nearest tenth. The final answer is 31.6 m.

ADD/SUBTRACT EXAMPLES

Subtract the following measurements using significant figures:

285.2 K 235 K

First, line up all of the measurements keeping the columns consistent:



Place a vertical line immediately to the right of the rightmost significant digit in the least precise measurement

Round all numbers that are more precise than the least precise measurement as all digits to the right of the line are not significant

The least precise measurement was only precise to the ones place, so the answer can only be precise to the nearest whole number. The final answer is 50. K. The decimal point is necessary to show the zero is significant.