

1. Conversions! (You must show all unit factors to receive credit!!!)

- a. Convert 0.7 seconds to milliseconds (ms)

- b. Convert 50000 cm to km

- c. Convert a speed of 0.020 meters per minute into inches per second.

- d. Convert a rate of 450 micrograms per minute to milligrams per hour.

- e. Convert 4.6×10^5 nanograms into kilograms.

- f. Convert 77 kilograms into centigrams.

- g. Convert the area of 0.110 ft^2 into square inches.

- h. Convert a volume of 3300 cubic centimeters into cubic feet.

- i. Convert 4.0 minutes to milliseconds.

- j. A patient is prescribed 180. mg / day of a drug. Convert this into grams per week.

- k. Convert the volume of 2000 cm^3 into cubic meters.

2a. How many molecules are in 0.156 moles of carbon dioxide?

b. If you have 2.49×10^{24} molecules of sugar, how many moles do you have? *(moles of sugar! not like moles on your body!)*

3. Perform the following operations, and then report the answer to the correct number of significant figures. Use scientific notation only when necessary for expressing the correct number of significant figures.

Calculator Answer: Correct sig. fig. answer:

126.2 + 4.41	<u>130.61</u>	_____
146.72 * 7.96	<u>1167.8912</u>	_____
364.8 / 4.56	<u>80</u>	_____
36480 / 4.56	<u>8000</u>	_____
230.2 - 7.2	<u>223</u>	_____
50.9 + 80.7	<u>131.6</u>	_____
14.181 - 3.12	<u>11.061</u>	_____
14.181 + 3.12	<u>17.301</u>	_____
14.18 / 13.21	_____	_____
14.18 * 13.21	_____	_____
3.42 - 2.62	_____	_____
12621 / 42.07	_____	_____
62100 / 1.5525	_____	_____

4. Round or rewrite the given number so that it has 3 sig. figs., and so it has 2 sig. figs. Use scientific notation only when necessary for expressing the correct number of significant figures.

Number	with 3 s.f.	with 2 s.f.
80000	_____	_____
0.0031833	_____	_____
729.12812	_____	_____
71000	_____	_____
30401	_____	_____
3333.33	_____	_____
6.1819	_____	_____
60	_____	_____
0.01898	_____	_____
90072	_____	_____