

Homework Format – The purpose of the assignments in this book is to allow you to practice the computations that we are learning and to reinforce key concepts that we cover. An important aspect of this is to ‘think in writing’. What this means is, while solving a problem, write out the steps that you take to solve it and then box your solution. One very important aspect of this is that you leave a trail of breadcrumbs – a path that you can follow backwards if, after checking your answer in the back of this book, you find that you have made a mistake. The homework assignments in this book are designed so that you can do all of your work in this book, but if you don’t show your work you will not get any credit. We will discuss this more in class, but the 3 things that I will expect of all of your homework assignments.

1. Do all work in your this workbook (exceptions will be noted as we go).
2. Show all work that you do – if you use your calculator, write it down.
3. Box your final answer.

Homework #1 – Conversions, Sig Figs, and Scientific Notation

Part 1 – Perform the following conversions:

a) 3.85 m to cm

$$(3.85 \text{ m}) \left(\frac{100 \text{ cm}}{1 \text{ m}} \right) = \boxed{385 \text{ cm}}$$

b) 35 ml to liters

$$(35 \text{ ml}) \left(\frac{1 \text{ L}}{1000 \text{ ml}} \right) = \boxed{0.035 \text{ L}}$$

c) 125 g to kg

$$(125 \text{ g}) \left(\frac{1 \text{ kg}}{1000 \text{ g}} \right) = \boxed{0.125 \text{ kg}}$$

d) 1.3 L to mL

$$(1.3 \text{ L}) \left(\frac{1000 \text{ mL}}{1 \text{ L}} \right) = \boxed{1300 \text{ mL}}$$

e) 45 mL to cm³

$$(45 \text{ mL}) \left(\frac{1 \text{ cm}^3}{1 \text{ mL}} \right) = \boxed{45 \text{ cm}^3}$$

f) 25.0 cal to kcal

$$(25 \text{ cal}) \left(\frac{1 \text{ kcal}}{1000 \text{ cal}} \right) = \boxed{0.025 \text{ kcal}}$$

g) 45 in to cm

$$(45 \text{ in}) \left(\frac{2.54 \text{ cm}}{1 \text{ in}} \right) = \boxed{114.3 \text{ cm}}$$

h) 2.65 mL to fluid ounces

$$(2.65 \text{ mL}) \left(\frac{1 \text{ oz}}{29.6 \text{ mL}} \right) = \boxed{0.0895 \text{ oz}}$$

i) 20000 leagues to miles

$$(20000 \text{ LEAGUES}) \left(\frac{3.5 \text{ km}}{1 \text{ LEAGUE}} \right) \left(\frac{1 \text{ MI}}{1.6 \text{ km}} \right) = \boxed{69068.3 \text{ MI}}$$

j) 15 l to gallons

$$(15 \text{ L}) \left(\frac{1 \text{ GAL}}{3.785 \text{ L}} \right) = \boxed{3.96 \text{ GAL}}$$

k) 45 Celsius to Kelvin

$$45 + 273 = \text{K}$$

$$\boxed{318 \text{ K}}$$

l) 15 ft to cm

$$(15 \text{ FT}) \left(\frac{12 \text{ IN}}{1 \text{ FT}} \right) \left(\frac{2.54 \text{ cm}}{1 \text{ IN}} \right) = \boxed{457.2 \text{ cm}}$$

m) 75 miles to km

$$(75 \text{ MI}) \left(\frac{1.6 \text{ KM}}{1 \text{ MI}} \right) = \boxed{120.75 \text{ KM}}$$

n) 5280 ft to miles

$$(5280 \text{ FT}) \left(\frac{1 \text{ MI}}{5280 \text{ FT}} \right) = \boxed{1 \text{ MI}}$$

Part 2 – How many significant figures do the following numbers have?

a) 68,945,510,000 7

d) 201 3

b) 4,635,852,224 10

e) 986 3

c) 0.009200 4

f) 0.0023405 5

