Chemistry 101-Unit 1
Answers to Practice Problems

Convert:

a.) 158 L to mL

Given: **158 L**
Wanted: **# mL**
Path: **L → mL**
Factor: $\frac{\textbf{1000 mL}}{\textbf{1 L}}$

$$\textbf{158 } \cancel{\textbf{L}} \textbf{ x } \frac{\textbf{1000 mL}}{\textbf{1 } \cancel{\textbf{L}}} \textbf{ = 158,000 mL}$$

b.) 35.2 cm to km

Given: **35.2 cm**
Wanted: **# km**
Path: **cm → m → km**
Factor: $\frac{\textbf{1 m}}{\textbf{1000 cm}}$ $\frac{\textbf{1 km}}{\textbf{1000 m}}$

$$\textbf{35.2 } \cancel{\textbf{cm}} \textbf{ x } \frac{\textbf{1 } \cancel{\textbf{m}}}{\textbf{100 } \cancel{\textbf{cm}}} \textbf{ x } \frac{\textbf{1 km}}{\textbf{1000 } \cancel{\textbf{m}}} \textbf{ = 0.000352 km}$$

c). 0.059 kg to g

Given: **0.059 kg**
Wanted: **# g**
Path: **kg → g**
Factor: $\frac{\textbf{1000 g}}{\textbf{1 kg}}$

$$\textbf{0.059 } \cancel{\textbf{kg}} \textbf{ x } \frac{\textbf{1000 g}}{\textbf{1 } \cancel{\textbf{kg}}} \textbf{ = 59g}$$

d.) 23.7 mm to m

Given: **23.7 mm**
Wanted: **# m**
Path: **mm → m**
Factor: $\frac{\textbf{1 m}}{\textbf{1000 mm}}$

$$\textbf{23.7 } \cancel{\textbf{mm}} \textbf{ x } \frac{\textbf{1 m}}{\textbf{1000 } \cancel{\textbf{mm}}} \textbf{ = 0.0237 m}$$

e.) 425 m to cm

Given: **425 m**
Wanted: **# cm**
Path: **m ➔ cm**
Factor: $\frac{\textbf{100 cm}}{\textbf{1 m}}$

425 ~~m~~ x $\frac{\textbf{100cm}}{\textbf{1 ~~m~~}}$ = 42,500 cm

f.) 465 m to km

Given: **465 m**
Wanted: **# km**
Path: **m ➔ km**
Factor: $\frac{\textbf{1 km}}{\textbf{1000 m}}$

465 ~~m~~ x $\frac{\textbf{1 km}}{\textbf{1000 ~~m~~}}$ = 0.465 km

g.) 5,890 mg to cg

Given: **5,890 mg**
Wanted: **# cg**
Path: **mg ➔ g ➔ cg**
Factor: $\frac{\textbf{1 g}}{\textbf{1000 mg}}$ $\frac{\textbf{100 cg}}{\textbf{1 g}}$

5,890 ~~mg~~ x $\frac{\textbf{1 g}}{\textbf{1000 ~~mg~~}}$ x $\frac{\textbf{100 cg}}{\textbf{1 g}}$ = 589 cg

h.) 92,000 mg to kg

Given: **92,000 mg**
Wanted: **# kg**
Path: **mg ➔ g ➔ kg**
Factor: $\frac{\textbf{1 g}}{\textbf{1000 mg}}$ $\frac{\textbf{1 kg}}{\textbf{1000 g}}$

92,000 ~~mg~~ x $\frac{\textbf{1 g}}{\textbf{1000 ~~mg~~}}$ x $\frac{\textbf{1 kg}}{\textbf{1000 g}}$ = 0.092 kg

i.) 30.9 cL to L

Given: **30.9 cL**
Wanted: **# L**
Path: **cL ➔ L**
Factor: $\frac{1\ L}{100\ cL}$

30.9 ~~cL~~ x $\frac{1\ L}{100\ ~~cL~~}$ = 0.309 L

j. 35.1cm to m

Given: **35.1cm**
Wanted: **# m**
Path: **cm ➔ m**
Factor: $\frac{1\ m}{100\ cm}$

35.1 ~~cm~~ x $\frac{1\ m}{100\ ~~cm~~}$ = 0.351 m

k. 44,300 mg to g

Given: **44,300 mg**
Wanted: **# g**
Path: **mg ➔ g**
Factor: $\frac{1\ g}{1000\ mg}$

44,300 ~~mg~~ x $\frac{1\ g}{1000\ ~~mg~~}$ = 44.3 g

l. 890 cm to mm

Given: **890 cm**
Wanted: **# mm**
Path: **cm ➔ m ➔ mm**
Factor: $\frac{1\ m}{100\ cm}$ $\frac{1000\ mm}{1\ m}$

890 ~~cm~~ x $\frac{1\ ~~m~~}{100\ ~~cm~~}$ x $\frac{1000\ mm}{1\ ~~m~~}$ = 8,900 mm