

CHM 110
Dimensional Analysis Practice
ANSWERS

Convert the following measurements from one unit to another.

1246 mm to cm $1246 \text{ mm} \times \frac{10^{-3}}{\text{mm}} \times \frac{\text{cm}}{10^{-2} \text{ m}} = 124.6 \text{ cm}$	124.6 cm
$1.4 \times 10^5 \mu\text{m}$ to mm $1.4 \times 10^5 \mu\text{m} \times \frac{10^{-6} \text{ m}}{\mu\text{m}} \times \frac{\text{mm}}{10^{-3} \text{ m}} = 140 \text{ mm}$	140 mm
64.5 mL to L $64.5 \text{ mL} \times \frac{10^{-3} \text{ L}}{\text{mL}} = 0.0645 \text{ L}$	0.0645 L
54.5 L to m^3 $54.5 \text{ L} \times \frac{\text{mL}}{10^{-3} \text{ L}} \times \frac{\text{cm}^3}{\text{mL}} \times \left(\frac{10^{-2} \text{ m}}{\text{cm}}\right)^3 = 0.0545 \text{ m}^3$	0.0545 m^3
0.074 m^3 to cm^3 $0.074 \text{ m}^3 \times \left(\frac{\text{cm}}{10^{-2} \text{ m}}\right)^3 = 74000 \text{ cm}^3$	74000 cm^3
15700 m to km $15700 \text{ m} \times \frac{\text{km}}{10^3 \text{ m}} = 15.7 \text{ km}$	15.7 km
$1.37 \times 10^{-2} \text{ km}$ to cm $1.37 \times 10^{-2} \text{ km} \times \frac{10^3 \text{ m}}{\text{km}} \times \frac{\text{cm}}{10^{-2} \text{ m}} = 1370 \text{ cm}$	1370 cm
1.43 Mg to kg $1.43 \text{ Mg} \times \frac{10^6 \text{ g}}{\text{Mg}} \times \frac{\text{kg}}{10^3 \text{ g}} = 1430 \text{ kg}$	1430 kg

0.42 dL to mL $0.42 \text{ dL} \times \frac{10^{-1} \text{ L}}{\text{dL}} \times \frac{\text{mL}}{10^{-3} \text{ L}} = 42 \text{ mL}$	42 mL
446000 g to Mg $446000 \text{ g} \times \frac{\text{Mg}}{10^6 \text{ g}} = 0.446 \text{ Mg}$	0.446 Mg