MATH 10 - UNIT 1 – LESSON 1 – UNIT CONVERSIONS

MEASUREMENT UNIT

Name: Key Block: _____ Date: _____

Unit Conversions

There are two tricks to unit conversion:

- Going to **smaller** units means going to **bigger** numbers, so multiply!
- Going to **bigger** units means going to **smaller** numbers, so divide!

Metric Conversions
1 km = 1000 m
1 m = 100 cm
1 cm = 10 mm

Example: Convert 5.2 km to metres

big units ↓ small units ↓

must get bigger so we ×

$5.2 \times 1000 = 5200\text{m}$

Example: Convert 145 cm to metres

small ↓ Big ↓

must get smaller so we ÷

$\frac{145}{100} = 1.45\text{m}$

Example: Convert 0.6 m to mm

big ↓ small ↓

must get bigger so we ×

$0.6 \times 100 \times 10 = 600\text{mm}$

↑ to cm ↑ to mm

Unit Analysis

This is the fail-safe way to do unit conversions in case you forget how much you need to multiply or divide by! Set up your conversion factors (fractions) and cancel out the units.

$$\frac{\text{Given unit}}{1} \times \frac{\text{New unit}}{\text{Given unit}} = \text{New unit}$$

Example: Convert 8 mm to cm

$\frac{8\text{ mm}}{1} \times \frac{1\text{ cm}}{10\text{ mm}}$

$= \frac{8}{10}\text{ cm} = 0.8\text{cm}$

Example: Convert 2400 mm to m

$\frac{2400\text{ mm}}{1} \times \frac{1\text{ cm}}{10\text{ mm}} \times \frac{1\text{ m}}{100\text{ cm}}$

$= \frac{2400}{1000}\text{ m}$

$= 2.4\text{m}$

Example: Convert 0.25 km to cm

$\frac{0.25\text{ km}}{1} \times \frac{1000\text{ m}}{1\text{ km}} \times \frac{100\text{ cm}}{1\text{ m}}$

move dp 5 ×

$= 0.25 \times 1000 \times 100\text{ cm}$

$= 25000\text{cm}$

Lesson 1 Homework: WS 10-1-1 "Unit Conversion"