Name

Date

Period

(SI) International System of Units

Scientists all over the world use the same system of units so they can communicate information clearly. This system of measurement is called the **International System of Units (SI)**. Metric measurement is based on the number ten and makes calculations with the system relatively easy. By using the following conversion chart, converting from one unit to another is done simply by moving the decimal point:

**Kilo- hecto- Deca- \_base\_ deci- centi- milli-**

The line “base” in the middle of the conversion chart can change depending on what we are measuring:

The unit for length is the meter (m).

The unit for mass is the gram (g).

The unit for volume is the liter (L).

***Section A: Convert the following metric measurements:***

1000 mg = \_\_\_\_\_ g 198 g = \_\_\_\_\_ kg 8 mm = \_\_\_\_\_ cm

160 cm = \_\_\_\_\_ mm 75 mL = \_\_\_\_\_ L 6.3 cm = \_\_\_\_\_ mm

109 g = \_\_\_\_\_ kg 50 cm = \_\_\_\_\_ m 5.6 m = \_\_\_\_\_ cm

250 m = \_\_\_\_\_ km 5 L = \_\_\_\_\_mL 26,000 cm = \_\_\_\_\_ m

14 km = \_\_\_\_\_ m 16 cm = \_\_\_\_\_mm 56,500 mm = \_\_\_\_\_ km

1 L = \_\_\_\_\_ mL 65 g = \_\_\_\_\_ mg 27.5 mg = \_\_\_\_\_ g

480 cm = \_\_\_\_\_ m 2500 m = \_\_\_\_\_ km 923 cm = \_\_\_\_\_ m

27 g = \_\_\_\_\_ kg 355 mL = \_\_\_\_\_ L 0.025 km = \_\_\_\_\_ cm

***Section B: Fill-in the missing information in the table below. SI prefixes and their meanings:***

|  |  |
| --- | --- |
| **Prefix** | **Meaning** |
|  | 0.001 |
|  | 0.01 |
| Deca- |  |
|  | 1 |
| Deci- |  |
|  | 100 |
|  | 1000 |

**Part C**

*Convert the following metric measurements:*

1000 mg = **1** g 198g = **0.198** Kg 8 mm = **0.8** cm

160 cm = **1,600** mm 75mL = **0.075** L 6.3 cm = **63** mm

109 g = **0.109** Kg 50 cm = **0.50** m 5.6 m = **560** cm

250 m = **0.250** Km 5 L = **5,000**mL 26,000 cm = **260** m

14 Km = **14,000** m 16 cm = **160**mm 56,500 mm = **0.0565** Km

1 L = **1,000** mL 65 g = **65,000** mg 27.5 mg = **0.0275** g

480 cm = **4.8** m 2500 m = **2.5** Km 923 cm = **9.23** m

27 g = **0.027** kg 355 mL = **0.355** L 0.025 Km = **2,500** cm

|  |  |  |
| --- | --- | --- |
| **Name** | **Symbol** | **Factor** |
| giga- | G | 109 |
| mega- | M | 106 |
| kilo- | k | 103 |
| hecto- | h | 102 |
| deca- | da | 101 |
| BASE UNIT |  | 100 |
| deci- | d | 10-1 |
| centi- | c | 10-2 |
| milli- | m | 10-3 |
| micro- | μ | 10-6 |
| nano- | n | 10-9 |
| pico- | p | 10-12 |
| femto- | f | 10-15 |

The number of the smaller unit is ten to the power of the number of steps between the metric prefixes. In our example, 1 km = 1x 106 mm. Another way to think of it is that the number of spaces you move the decimal point is the number of steps, so six steps is six decimal places, which means that 1 km = 1,000,000 mm. Or if you went from the smaller to the larger unit, 1mm = .000001km

