

Name _____ Period _____

Metric Conversions – SI/metric to English

	<u>You have:</u>	<u>Multiply by:</u>	<u>To find:</u>
Length	inches	2.54	centimeters (cm)
	centimeters	0.39	inches
	feet	0.30	meters
	meters	3.28	feet
	yards	0.91	meters
	meters	1.09	yards
	miles	1.61	kilometers
	kilometers	0.62	miles

	<u>You have:</u>	<u>Multiply by:</u>	<u>To find:</u>
Mass and Weight*	ounces	28.35	grams
	grams	0.04	ounces
	pounds	0.45	kilograms
	kilograms	2.20	pounds
	tons	0.91	metric tons
	metric tons	1.10	tons
	pounds	4.45	newtons
	newtons	0.23	pounds

* Weight as measured in standard Earth gravity

	<u>You have:</u>	<u>Multiply by:</u>	<u>To find:</u>
Volume	cubic inches	16.39	cubic centimeters
	cubic centimeters	0.06	cubic inches
	cubic feet	0.03	cubic meters
	cubic meters	35.31	cubic feet
	liters	1.06	quarts
	liters	0.26	gallons
	gallons	3.78	liters

	<u>You have:</u>	<u>Multiply by:</u>	<u>To find:</u>
Area	square inches	6.45	square centimeters
	square centimeters	0.16	square inches
	square feet	0.09	square meters
	square meters	10.76	square feet
	square miles	2.59	square kilometers
	square kilometers	0.39	square miles

SI Units of Measurement

SI Base Units

Measurement	Unit	Symbol
length	meter	m
mass	kilogram	kg
time	second	s
electric current	ampere	A
temperature	kelvin	K
amount of substance	mole	mol
intensity of light	candela	cd

Units derived from SI Base Units

Measurement	unit	Symbol	Expressed in Base Units
energy	joule	J	$\text{kg} \cdot \text{m}^2/\text{s}^2$ or $\text{N} \cdot \text{m}$
force	newton	n	$\text{kg} \cdot \text{m}/\text{s}^2$
frequency	hertz	Hz	1/s
potential difference	volt	V	$\text{kg} \cdot \text{m}^2/(\text{A} \cdot \text{s}^3)$ or W/A
power	watt	W	$\text{kg} \cdot \text{m}^2/\text{s}^3$ or J/s or $\text{V} \cdot \text{A}$
pressure	pascal	Pa	$\text{kg}/(\text{m}^2 \cdot \text{s}^2)$ or N/m^2
quantity of electric charge	coulomb	C	$\text{A} \cdot \text{s}$

Common SI Prefixes

Numbers are Greater than 1

Prefix	Symbol	Multiplier	
<i>Giga-</i>	G	1,000,000,000	1×10^9
<i>mega-</i>	M	1,000,000	1×10^6
<i>kilo-</i>	k	1000	1×10^3
<i>hecto-</i>	h	100	1×10^2
<i>deka-</i>	d	10	1×10^1

Numbers are less than 1

Prefix	Symbol	Multiplier	
<i>deci-</i>	d	0.1	1×10^{-1}
<i>centi-</i>	c	0.01	1×10^{-2}
<i>milli-</i>	m	0.001	1×10^{-3}
<i>micro-</i>	μ	0.000001	1×10^{-6}
<i>pico-</i>	$\mu\mu$ or p	.000000000001	1×10^{-12}