

✕ "Unit Conversions" ✕

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The top level conversions that come up, some to be aware of, some to memorize:

* Time

60 seconds = 1 minute

60 minutes = 1 hour

24 hours = 1 day

24 hour clock time to 12 hour clock time including a.m to p.m

1 year = 365 days (technically 364.2422 often just said to be 365 1/4)

1 year = 52 weeks (52 x 7 = 364 days (yup it doesn't fit exactly))

1 score = 20 years

1 century = 100 years

1 millennium = 1000 years

Months, their order, their position, and number of days: 1: January(31), 2: February(28 or 29), 3: March(31), 4: April(30), 5: May(31), 6: June(30), 7: July(31), 8: August(31), 9: September(30), 10: October(31), 11: November(30), 12: December(31)

"Thirty days has September, April, June, and November, All the rest have thirty-one, Save February at twenty-eight, But leap year, coming once in four, February then has one day more."

* Length

1 foot = 12 inches

1 yard = 3 feet ∴ 1 yard = 36 inches ∴ 1.5 yards = 18 inches

1 mile = 5280 feet

1 meter = 100 centimeters = 1000 millimeters

∴ 1 centimeter = 10 millimeters

1 kilometer = 1000 meters

(1 meter is about 3.28 feet therefore 3 meters is approximately 9.84 ft almost 10 ft)

kilo deals with thousands (1000)

centi deals with hundredths (1/100 or .01)

milli deals with thousandths (1/1000 or .001)

* Weight

1 pound = 16 ounces

1 ton = 2000 pounds

1 gram = 1000 milligrams

1 kilogram = 1000 grams

* Groups

1 dozen = 12

1 gross = 144

* Temperature

$F = (9/5 C) + 32$ or $1.8C + 32$

$C = 5/9 \times (F - 32)$

$C = K - 273.15$ || $K = C + 273.15$ || $K = (F - 32) \times 5/9 + 273.15$

These are often given to you, but you should still be familiar with them.

* Degrees to radians

radians = degrees $\times \pi / 180$

degrees = radians $\times 180 / \pi$

These are high school and above unit conversions, otherwise not required/used.

* Capacity
1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

* Metric
1 liter = 1000 milliliters

NOTE: milli is normally confused with one millionth, because milli is part of both words.

There is a relationship but not in the way you'd think in terms of fraction, as million uses milli as a prefix because it is a thousand thousand.
∴ Be careful with milli

Also to be clearer on some of the conversions, let's say for instance you have 1000 milligrams. Well, a milligram is .001 of a gram hence 1000 milligrams is 1000 x .001 of a gram and that is one gram.

Or for instance since 1 kg = 1000 g, and 1 g = 1000 mg,
then 1 kg = 1000 x 1000 mg = 1000000 mg

* There is also the phrase (Some students learn a similar phrase)

King	Henry	Doesn't	Usually	Drink	Chocolate	Milk
Kilo	Hecto	Deca	UNIT	Deci	Centi	Milli
1000	100	10	(1)	.1	.01	.001
				tenth	hundredth	thousandths

Each column is a factor of 10 smaller going from left to right.
Each column is a factor of 10 larger going from right to left.

The middle is a "unit" and spoken of as "one of those" for instance "one liter"

This means for instance that:

1 kiloliter is 1000 liters
1 milliliter is 1 thousandth of a liter, or .001 liter
100 liters must be a hectoliter

To convert go back and forth by a factor of 10 as noted above. For instance,
A hectoliter is 1000 deciliters (multiply by 10 going from left to right, same as moving the decimal point once to the right for each unit type)
1000 milliliters is 100 centiliters (divide by 10 going from left to right, same as moving decimal point once to the left for each unit type)

* Note that in addition to "unit conversions", the conversion of one unit to another, you also need to be able to process a number of other conversions including but not limited to:

- o fraction to decimal and vice versa
- o improper fraction to mixed fractions and vice versa
- o percent to decimal and to fraction and vice versa
- o standard form to scientific notation
- o coordinate geometry transformations
- o simplified radical form
- o exponent notation to root form (radicals)
- o ratio to fraction
- o a common denominator

* Constants

Some unit conversions require the use of known constants.
However, I've left them out of this document as the main one for the purpose of this document is π , which you had best be familiar with.

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