**Example 1:** Convert 500 millimeters to inches:

500 mm x 0.03937 = 19.7 inches

**Example 2**: Convert 500 millimeters to feet:

500 mm x 0.03937 = **19.7 inches**, and there are 12 inches in a foot, so

19.7/12 = **1.64 feet** (or 1 foot and 7.7 inches)

**Note: values are accurate to 4 significant digits only.**

**Length**

|  |  |  |  |
| --- | --- | --- | --- |
| **Metric** | |  | **US or Imperial** |
| 1 millimeter [mm] |  | arrow | 0.03937 in |
| 1 centimeter [cm] | 10 mm | arrow | 0.3937 in |
| 1 meter [m] | 100 cm | arrow | 1.0936 yd |
| 1 kilometer [km] | 1000 m | arrow | 0.6214 mile |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **US or Imperial** | |  | **Metric** |
| 1 inch [in] |  | arrow | 2.54 cm |
| 1 foot [ft] | 12 in | arrow | 0.3048 m |
| 1 yard [yd] | 3 ft | arrow | 0.9144 m |
| 1 mile | 1760 yd | arrow | 1.6093 km |
| 1 int nautical mile | 2025.4 yd | arrow | 1.853 km |
|  |  |  |  |

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**Area**

|  |  |  |  |
| --- | --- | --- | --- |
| **Metric** | |  | **US or Imperial** |
| 1 sq cm [cm2] | 100 mm2 | arrow | 0.1550 in2 |
| 1 sq m [m2] | 10,000 cm2 | arrow | 1.1960 yd2 |
| 1 hectare [ha] | 10,000 m2 | arrow | 2.4711 acres |
| 1 sq km [km2] | 100 ha | arrow | 0.3861 mile2 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **US or Imperial** | |  | **Metric** |
| 1 sq inch [in2] |  | arrow | 6.4516 cm2 |
| 1 sq foot [ft2] | 144 in2 | arrow | 0.0929 m2 |
| 1 sq yd [yd2] | 9 ft2 | arrow | 0.8361 m2 |
| 1 acre | 4840 yd2 | arrow | 4046.9 m2 |
| 1 sq mile [mile2] | 640 acres | arrow | 2.59 km2 |
|  |  |  |  |

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**Volume/Capacity**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Metric** | |  | **US Measure** | **Imperial** |
| 1 cu cm [cm3] |  | arrow | 0.0610 in3 | |
| 1 cu decimeter [dm3] | 1,000 cm3 | arrow | 0.0353 ft3 | |
| 1 cu meter [m3] | 1,000 dm3 | arrow | 1.3080 yd3 | |
| 1 liter [l] | 1 dm3 | arrow | 2.113 fluid pt | 1.7598 pt |

|  |  |  |  |
| --- | --- | --- | --- |
| **US Measure** | **Imperial** |  | **Metric** |
| 1 cu inch [in3] | | arrow | 16.387 cm3 |
| 1 cu foot [ft3] | | arrow | 0.02832 m3 |
| 1 fluid ounce | 1.0408 UK fl oz | arrow | 29.574 ml |
| 1 pint (16 fl oz) | 0.8327 UK pt | arrow | 0.4732 liters |
| 1 gallon (231 in3) | 0.8327 UK gal | arrow | 3.7854 liters |

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**Mass**

|  |  |  |  |
| --- | --- | --- | --- |
| **Metric** | |  | **US or Imperial** |
| 1 milligram [mg] |  | arrow | 0.0154 grain |
| 1 gram [g] | 1,000 mg | arrow | 0.0353 oz |
| 1 kilogram [kg] | 1,000 g | arrow | 2.2046 lb |
| 1 tonne [t] | 1,000 kg | arrow | 1.1023 short ton |
| 1 tonne [t] | 1,000 kg | arrow | 0.9842 long ton |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **US or Imperial** | |  | **Metric** |
| 1 ounce [oz] | 437.5 grain | arrow | 28.35 g |
| 1 pound [lb] | 16 oz | arrow | 0.4536 kg |
| 1 stone | 14 lb | arrow | 6.3503 kg |
| 1 hundredweight [cwt] | 112 lb | arrow | 50.802 kg |
| 1 short ton (US) |  | arrow | 0.9072 t |
| 1 long ton (UK) |  | arrow | 1.0160 t |
|  |  |  |  |

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**Temperature**

To convert from Celsius to Fahrenheit, first multiply by 9/5, then add 32.  
To convert from Fahrenheit to Celsius, first subtract 32, then multiply by 5/9

(To find out why, visit the [Temperature Conversion](https://www.mathsisfun.com/temperature-conversion.html) page)

**History of Measurement**

Years ago people came up with standard length measures, but they didn't all agree on one system.

The Imperial System (which uses yards, feet, inches, etc to measure length) was developed over hundreds of years in the UK, then the French developed the Metric System (meters) in 1670, which soon spread through Europe, even to England itself in 1963. But the USA and a few other countries still prefer feet and inches.