

Common Weights and Measures

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Length

Metric System

1 millimeter = $1/1,000$ meter

1 centimeter = $1/100$ meter

1 decimeter = $1/10$ meter

1 meter (basic unit of length)

1 dekameter = 10 meters

1 kilometer = 1,000 meters

American and British Units

1 inch = $1/36$ yard = $1/12$ foot

1 foot = $1/3$ yard

1 yard (basic unit of length)

1 rod = $5 \frac{1}{2}$ yards

1 furlong = 220 yards = 40 rods

1 mile = 1,760 yards = 5,280 feet

1 fathom = 6 feet

1 nautical mile = 6,076.1 feet

Conversion Factors

1 centimeter = 0.39 inch

1 inch = 2.54 centimeters

1 meter = 39.37 inches

1 foot = 0.305 meter

1 meter = 3.28 feet

1 yard = 0.914 meter

1 meter = 1.094 yards

1 kilometer = 0.62 mile

1 mile = 1.609 kilometers

Area

Metric System

1 square centimeter = 1/10,000 square meter

1 square decimeter = 1/100 square meter

1 square meter (basic unit of area)

1 are = 100 square meters

1 hectare = 10,000 square meters = 100 ares

1 square kilometer = 1,000,000 square meters

American and British Units

1 square inch = 1/1,296 square yard = 1/144 square foot

1 square foot = 1/9 square yard

1 square yard (basic unit of area)

1 square rod = 30 1/4 square yards

1 acre = 4,840 square yards = 160 square rods

1 square mile = 3,097,600 square yards = 640 acres

Conversion Factors

1 square centimeter = 0.155 square inch

1 square inch = 6.45 square centimeters

1 acre = 0.405 hectare

1 hectare = 2.47 acres

1 square kilometer = 0.386 square mile

1 square mile = 2.59 square kilometers

Volume and Capacity (Liquid and Dry)

Metric System

1 cubic centimeter = $1/1,000,000$ cubic meter

1 cubic decimeter = $1/1,000$ cubic meter

1 cubic meter = 1 stere (basic unit of volume)

1 milliliter = $1/1,000$ liter = 1 cubic centimeter

1 centiliter = $1/100$ liter

1 deciliter = $1/10$ liter

1 liter = 1 cubic decimeter (basic unit of capacity)

1 dekaliter = 10 liters

1 hectoliter = 100 liters = $1/10$ cubic meter

American and British Units

1 cubic inch = $1/46,656$ cubic yard = $1/1,728$ cubic foot

1 cubic foot = $1/27$ cubic yard

1 cubic yard (basic unit of volume)

1 U.S. fluid ounce = $1/128$ U.S. gallon = $1/16$ U.S. pint

1 British imperial fluid ounce = $1/160$ imperial gallon = $1/20$ imperial pint

1 pint = $1/8$ gallon = $1/2$ quart

1 quart = $1/4$ gallon

1 U.S. gallon (basic unit of liquid capacity in the United States) = 231 cubic inches

1 imperial gallon (basic unit of liquid capacity in some Commonwealth nations) = 277.4 cubic inches

1 dry pint = $1/64$ bushel = $1/2$ dry quart

1 dry quart = $1/32$ bushel = $1/8$ peck

1 peck = $1/4$ bushel

1 U.S. bushel (basic unit of dry capacity in the United States) = 2,150.4 cubic inches

1 imperial bushel (basic unit of dry capacity in some Commonwealth nations) = 2,219.4 cubic inches

inches

Conversion Factors

1 cubic centimeter = 0.06 cubic inch

1 cubic inch = 16.4 cubic centimeters

1 cubic yard = 0.765 cubic meter

1 cubic meter = 1.3 cubic yards

1 milliliter = 0.034 fluid ounce

1 fluid ounce = 29.6 milliliters

1 U.S. quart = 0.946 liter

1 liter = 1.06 U.S. quarts

1 U.S. gallon = 3.8 liters

1 imperial gallon = 1.2 U.S. gallons = 4.5 liters

1 liter = 0.9 dry quart

1 dry quart = 1.1 liters

1 dekaliter = 0.28 U.S. bushel

1 U.S. bushel = 0.97 imperial bushel = 3.5 dekaliters

Weight (Mass)

Metric System

1 milligram = 1/1,000,000 kilogram = 1/1,000 gram

1 centigram = 1/100,000 kilogram = 1/100 gram

1 decigram = 1/10,000 kilogram = 1/10 gram

1 gram = 1/1,000 kilogram

1 dekagram = 1/100 kilogram = 10 grams

1 hectogram = 1/10 kilogram = 100 grams

1 kilogram (basic unit of weight or mass)

1 metric ton = 1,000 kilograms

American and British Units: Avoirdupois

1 grain = $1/7,000$ pound = $1/437.5$ ounce

1 dram = $1/256$ pound = $1/16$ ounce

1 ounce = $1/16$ pound

1 pound (basic unit of weight or mass)

1 short hundredweight = 100 pounds

1 long hundredweight = 112 pounds

1 short ton = 2,000 pounds

1 long ton = 2,240 pounds

American and British Units: Troy and Apothecaries'

1 grain = $1/7,000$ avoirdupois pound = $1/5,760$ troy or apothecaries' pound

1 apothecaries' scruple = 20 grains = $1/3$ dram

1 pennyweight = 24 grains = $1/20$ troy ounce

1 apothecaries' dram = 60 grains = $1/8$ apothecaries' ounce

1 troy or apothecaries' ounce = 480 grains = $1/12$ troy or apothecaries' pound

1 troy or apothecaries' pound = 5,760 grains = $5,760/7,000$ avoirdupois pound

Conversion Factors

1 milligram = 0.015 grain

1 grain = 64.8 milligrams

1 gram = 0.035 avoirdupois ounce

1 avoirdupois ounce = 28.35 grams

1 troy or apothecaries' pound = 0.82 avoirdupois pound = 0.37 kilogram

1 avoirdupois pound = 1.2 troy or apothecaries' pounds = 0.45 kilogram

1 kilogram = 2.205 avoirdupois pounds

1 short ton = 0.9 metric ton

1 metric ton = 1.1 short tons

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