

Weights and Measures

Measures of Length

1 mile = 1760 yards = 5280 feet
 1 yard = 3 feet = 36 inches 1 foot = 12 inches
 1 mil = 0.001 inch 1 fathom = 2 yards = 6 feet
 1 rod = 5.5 yards = 16.5 feet 1 hand = 4 inches 1 span = 9 inches
 1 micro-inch = one millionth inch or 0.000001 inch (1 micrometer or micron = one millionth meter = 0.00003937 inch)

Surveyor's Measure

1 mile = 8 furlongs = 80 chains
 1 furlong = 10 chains = 220 yards
 1 chain = 4 rods = 22 yards = 66 feet = 100 links
 1 link = 7.92 inches

Nautical Measure

1 league = 3 nautical miles
 1 nautical mile = 6076.11549 feet = 1.1508 statute miles. (The *knot*, which is a nautical unit of speed, is equivalent to a speed of 1 nautical mile per hour.)
 One degree at the equator = 60 nautical miles = 69.047 statute miles. 360 degrees = 21,600 nautical miles = 24,856.8 statute miles = circumference at equator.

Square Measure

1 square mile = 640 acres = 6400 square chains
 1 acre = 10 square chains = 4840 square yards = 43,560 square feet
 1 square chain = 16 square rods = 484 square yards = 4356 square feet
 1 square rod = 30.25 square yards = 272.25 square feet = 625 square links
 1 square yard = 9 square feet
 1 square foot = 144 square inches
 An acre is equal to a square, the side of which is 208.7 feet.

Measure used for Diameters and Areas of Electric Wires

1 circular inch - area of circle 1 inch in diameter = 0.7854 square inch
 1 circular inch = 1,000,000 circular mils
 1 square inch = 1.2732 circular inch = 1,273,239 circular mills
 A circular mil is the area of a circle 0.001 inch in diameter

Cubic Measure

1 cubic yard = 27 cubic feet

1 cubic foot = 1728 cubic inches

The following measures are also used for wood and masonry:

1 cord of wood = 4 x 4 x 8 feet = 128 cubic feet

1 perch of masonry = $16\frac{1}{2} \times 1\frac{1}{2} \times 1$ foot = $24\frac{3}{4}$ cubic feet

Shipping Measure

For measuring entire internal capacity of a vessel:

1 register ton = 100 cubic feet

For measurement of cargo:

Approximately 40 cubic feet of merchandise is considered a shipping ton, unless that bulk would weigh more than 2000 pounds, in which case the freight charge may be based upon weight.

40 cubic feet = 32.143 U.S. bushels = 31.16 Imperial bushels

Dry Measure

1 bushel (U.S. or Winchester struck bushel) = 1.2445 cubic foot = 2150.42 cubic inches.

1 bushel = 4 pecks = 32 quarts = 64 pints.

1 peck = 8 quarts = 16 pints

1 quart = 2 pints

1 heaped bushel = $1\frac{1}{4}$ struck bushel

1 cubic foot = 0.8036 struck bushel

1 British Imperial bushel = 8 Imperial gallons = 1.2837 cubic foot = 2218.19 cubic inches

Liquid Measure

1 U.S. gallon = 0.1337 cubic foot = 231 cubic inches = 4 quarts = 8 pints

1 quart = 2 pints = 8 gills

1 pint = 4 gills

1 British Imperial gallon = 1.2009 U.S. gallon = 277.42 cubic inches

1 cubic foot = 7.48 U.S. gallons

Measures of Weight

Avoirdupois or Commercial Weight

- 1 gross or long ton = 2240 pounds
- 1 net or short ton = 2000 pounds
- 1 pound = 16 ounces = 7000 grains
- 1 ounce = 16 drachms = 437.5 grains

Troy Weight, used for Weighing Gold and Silver

- 1 pound = 12 ounces = 5760 grains
- 1 ounce = 20 pennyweights = 480 grains
- 1 pennyweight = 24 grains
- 1 carat (used in weighing diamonds) = 3.086 grains
- 1 grain Troy = 1 grain avoirdupois = 1 grain apothecaries' weight.

Measures of Pressure

- 1 pound per square inch = 144 pounds per square foot = 0.068 atmosphere = 2.042 inches of mercury at 62 degrees F = 27.7 inches of water at 62 degrees F = 2.31 feet of water at 62 degrees F
- 1 atmosphere = 30 inches of mercury at 62 degrees F = 14.7 pounds per square inch = 2116.3 pounds per square foot = 33.95 feet of water at 62 degrees F.
- 1 foot of water at 62 degrees F = 62.355 pounds per square foot = 0.433 pound per square inch.
- 1 inch of mercury at 62 degrees F = 1.132 foot of water = 13.58 inches of water = 0.491 pound per square inch.

Miscellaneous

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| 1 great gross = 12 gross = 144 dozen | 1 quire = 24 sheets |
| 1 gross = 12 dozen = 144 units | 1 ream = 20 quires = 480 sheets |
| 1 dozen = 12 units | 1 ream printing paper - 500 sheets |
| 1 score = 20 units | |