

## WEIGHTS AND MEASURES—Continued.

### LIQUID MEASURE.

4 gills.....	= 1 pint
2 pints.....	= 1 quart
4 quarts.....	= 1 gallon
A cubic foot of water weighs almost 1,000 oz., and contains almost 6½ gallons.	

### SURFACE, SQUARE OR LAND MEASURE.

144 square inches.....	= 1 square foot
9 square feet.....	= 1 square yard
30½ square yards.....	= 1 square rod
10 square chains.....	= 1 acre
160 square rods or 4,840 sq. yards.....	= 1 acre
640 acres.....	= 1 square mile

### CUBIC OR SOLID MEASURE.

1,728 cubic inches.....	= 1 cubic foot
27 cubic feet.....	= 1 cubic yard
128 cubic feet.....	= 1 cord

### MEASURES OF TIME.

60 seconds.....	= 1 minute
60 minutes.....	= 1 hour
24 hours.....	= 1 day
7 days.....	= 1 week
52 weeks.....	= 1 year
12 months.....	= 1 year
365 days.....	= 1 year
366 days.....	= 1 leap-year
100 years.....	= 1 century

The mean solar year is equal to 365 days, 5 hrs. 48 min. 46 sec., or nearly 365½ days.

Every year whose number is divisible by 4 is a leap year, unless the number of the year ends in two ciphers, in which case the number must be divisible by 400. Thus, 2000 and 2400 will be leap years, but 1900 was not a leap year.

### ANGULAR MEASURE.

60 seconds (").....	= 1 minute, or 1'
60 minutes (').....	= 1 degree, or 1°
90 degrees (°).....	= 1 right angle

### MISCELLANEOUS.

12 articles.....	= 1 dozen
12 dozen.....	= 1 gross
12 gross.....	= 1 great gross
20 single things.....	= 1 score
24 sheets of paper.....	= 1 quire
20 quires.....	= 1 ream

### APOTHECARIES MEASURE FOR FLUIDS.

60 minims.....	= 1 fluid drachm
8 fluid drachms.....	= 1 fluid ounce
20 fluid ounces.....	= 1 pint

### TROY WEIGHT.

For Gold, Silver and Jewels.

24 grains.....	= 1 pennyweight (dwt.)
20 dwts.....	= 1 ounce
480 grains.....	= 1 " "
12 ounces.....	= 1 pound
5,760 grains.....	= 1 " "

### MEASURES OF LENGTH.

Mile Geographical, Admiralty Knot, or Nautical Mile, 6,080 Feet.....	= 1.15 Mile Statute
League.....	= 3 Miles
Degree.....	= 60 Geographical, or 69.121 Statute Miles
Inch, in.....	= 72 Points or 12 Lines
Nail, ¼ yd.....	= 2½ Inches
Palm.....	= 3 Inches
Hand.....	= 4 Inches
Quarter (or a Span).....	= 9 Inches
Foot.....	= 12 Inches
Cubit.....	= 18 Inches
Yard.....	= 36 Inches
Pace, Military.....	= 2 Feet 6 Inches
Fathom.....	= 6 Feet
Rod, Pole, or Perch.....	= 5½ Yards
Chain (100 Links).....	= 22 Yards (4 Poles)
Link.....	= 7.92 Inches
Cable's Length.....	= 100 Fathoms, 600 Feet
Furlong.....	= 40 Rods, 220 Yards
Mile.....	= 8 Furlongs, 80 Chains, 320 Rods, 1,760 Yards, 5,280 Feet, 63,360 Inches

### CIRCLES, SPHERES AND CYLINDERS.

Diameter of a Circle × 3.1416 gives Circumference  
 Diameter Squared × .7854 gives Area of Circle  
 Diameter Squared × 3.1416 gives Surface of Sphere  
 Diameter Cubed × .5236 gives Volume of Sphere  
 One Degree of Circumference × 57.3 gives Radius  
 Diameter of Cylinder × 3.1416, and product by its length, gives the Surface  
 Diameter of Cylinder Squared × .7854, and product by the length, gives Volume  
 A Circular Acre is 235,504 feet, a Circular Rod 117,752 feet in diameter. The Circumference of the Earth is about 24,855 miles, and the Diameter about 7,900 miles

## METRIC WEIGHTS AND MEASURES.

The following Table gives the equivalents of the principal units of measurements in the British and Metric Systems.

### MEASUREMENTS OF LENGTH.

1 inch.....	= 2.54 centimetres
1 foot.....	= 30.48 " "
1 yard.....	= 91.44 " "
1 mile.....	= 1.609 kilometres
1 centimetre.....	= 0.3937 inches
1 metre.....	= 39.37 " "
1 ".....	= 1.094 yards
1 kilometre.....	= 0.6214 miles
1 ".....	= 1000 metres
1 metre.....	= 100 centimetres
1 centimetre.....	= 10 millimetres

### MEASUREMENTS OF SURFACE.

1 sq. inch.....	= 6.4514 sq. centimetres
1 " foot.....	= 929.01 " "
1 " yard.....	= 8361.3 " "
1 " ".....	= 0.83613 " metres
1 " centimetre.....	= 0.1550 " inches
1 " metre.....	= 10.764 " feet
1 " ".....	= 1.196 " yards

### MEASUREMENTS OF VOLUME.

1 cu. inch.....	= 16.387 cu. centimetres
1 " foot.....	= 28317 " "
1 " yard.....	= 0.7645 " metres
1 " centimetre.....	= 0.061 " inches
1 litre.....	= 1000 " centimetres
1 ".....	= 61.024 " inches
1 cu. metre.....	= 1.308 " yards
1 imperial gallon.....	= 10 lbs. water at 62° F.
1 " ".....	= 277.274 cu. inches
1 " ".....	= 4.546 litres
1 " quart.....	= 1.136 " "
1 U.S. gallon.....	= 231 cu. inches
1 " ".....	= 3.784 litres
1 litre.....	= 1.7598 imperial pints

### MEASUREMENTS OF WEIGHT (MASS).

1 lb. (7,000 grains).....	= 453.59 grams
1 oz.....	= 28.3495 " "
1 grain.....	= 0.0648 " "
1 kilogram.....	= 2.205 lbs.
1 gram.....	= 15.432 grains