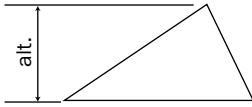


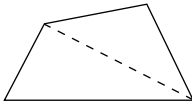
# MEASURES AND CONVERSIONS

## Areas of Plane Surfaces



### Triangle

$$\text{Area} = \frac{\text{Altitude} \times \text{Base}}{2}$$



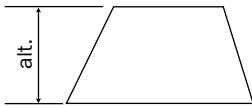
### Trapezium irregular quadrilateral

**Area:** Divide into two triangles and compute as above



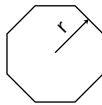
### Parallelogram

**Area** = Either parallel side  $\times$  altitude



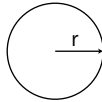
### Trapezoid

$$\text{Area} = \frac{1}{2} \text{ sum of parallel sides} \times \text{altitude}$$



### Regular polygon

$$\text{Area} = \frac{1}{2} \text{ sum of all sides} \times \text{inside radius}$$

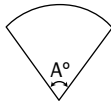


### Circle

$$\text{Area} = \pi r^2, \text{ or } = 0.7854 d^2, \text{ or } = 0.0796 \text{ cir}^2$$

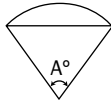
where

$$\pi = 3.1416$$



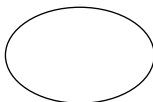
### Sector of Circle

$$\text{Area} = \frac{A^\circ}{360^\circ} \times \pi r^2 \text{ or length of arc} \times \frac{1}{2} \text{ radius}$$



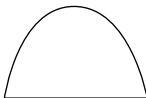
### Segment of Circle

$$\text{Area} = \frac{r^2}{2} \left( \frac{\pi A^\circ}{180} - \sin A^\circ \right) \text{ or subtract triangle from sector}$$



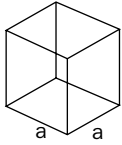
### Ellipse

$$\text{Area} = \text{Major axis} \times \text{minor axis} \times 0.7854$$

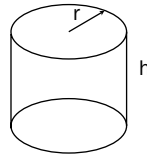


### Parabola

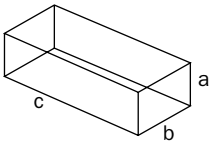
$$\text{Area} = \text{Base} \times \frac{2}{3} \text{ altitude}$$

**Volume of Three-Dimensional Objects**


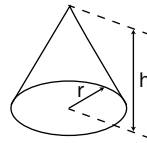
**Cube**  
Volume =  $a^3$



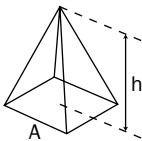
**Cylinder**  
Volume =  $\pi r^2 h$



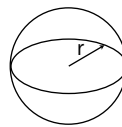
**Rectangular prism**  
Volume =  $abc$



**Cone**  
Volume =  $\frac{\pi r^2 h}{3}$



**Pyramid**  
Volume =  $\frac{A h}{3}$



**Sphere**  
Volume =  $\frac{4\pi r^2 h}{3}$

**Useful Rules**

To Find Circumference

- Multiply diameter by 3.1416
- Or divide diameter by 0.3183

To Find Diameter

- Multiply circumference by 0.3183
- Or divide circumference by 3.1416

To Find Radius

- Multiply circumference by 0.15915
- Or divide circumference by 6.28318

To Find Area of a Circle

- Multiply circumference by one-quarter of the diameter.
- Or multiply the square of the diameter by 0.7854
- Or multiply the square of the circumference by 0.07958
- Or multiply the square of one half of the diameter by 3.1416

To Find the Surface of a Sphere or Globe

- Multiply the diameter by the circumference
- Or multiply the square of the diameter by 3.1414
- Or multiply four times the square of radius by 3.1416

To Find Side of an Inscribed Square

- Multiply diameter by 0.7071
- Or multiply circumference by 0.2251
- Or divide circumference by 4.4428

To Find Side of an Equal Square

- Multiply diameter by 0.8862
- Or divide diameter by 1.1284
- Or multiply circumference by 0.2821
- Or divide circumference by 3.545

Square

- A side multiplied by 1.4142 equals the diameter of its circumscribing circle.
- A side multiplied by 4.443 equals the circumference of its circumscribing circle.
- A side multiplied by 1.128 equals the diameter of an equal circle.
- A side multiplied by 3.547 equals the circumference of an equal circle.

To Find the Cubic Inches (Volume) in a Globe or Sphere

- Multiply the cube of the diameter by 0.5236

**Signs and Symbols**

	geometrical proportion		centerline
	identical with		fence line
$\pm$	plus or minus	$L^s$	lengths
$\sphericalangle$	angle	$L$	lineal foot
	right angle	$\square$ or $\square$	per square foot
[ or >	greater than	$\phi$	diameter
] or <	less than	$P$	plate
$\perp$	perpendicular	$C$	centerline
$\sim$	difference	$P -$	direction of pressure
$\int$	integration		[ indicates cross section of a drawing
	equivalent		[ indicates exposed surface of a cross section
$\therefore$	proportion	#	[ pounds after a number, number before a number
$-:$	difference, excess	$\square$	stadia station
$\therefore$	therefore	$\triangle$	triangulation station
$\because$	because	$\odot$	transit transverse station
$\infty$	infinity	$\bullet$	indicates elevation point
$\propto$	varies as		[ dimension line, number indicates distance between lines
$\sqrt{\quad}$	radical		[ indicates that a section of a drawing, identical to the sections on either side of the symbol, has been omitted to reduce size
$^{\circ}$	degree		[ indicates dimensions of rise and span of a roof pitch
'	minute or foot		
"	second or inch		
— <b>W</b> —	water line		
— <b>G</b> —	gas line		

**Measures****The English System****Linear Measure**

12 inches = 1 foot  
 4 inches = 1 hand  
 3 feet = 1 yard  
 5.5 yards = 1 rod  
 40 rods = 1 furlong  
 8 furlongs = 1 mile

**Cubic Measure**

1,728 cubic inches = 1 cubic foot  
 27 cubic feet = 1 cubic yard  
 128 cubic feet (of cut wood) = 1 cord  
 24.75 cubic feet = 1 perch

**Measure of Angles and Arcs**

60 seconds = 1 minute  
 60 minutes = 1 degree  
 90 degrees = 1 quadrant  
 360 degrees = 1 full circle

**Surveyor's or Land Measure**

1 link = 7.92 inches  
 1 rod (also called *pole* or *perch*) = 25 links = 16½ feet  
 1 chain = 100 links = 4 rods = 66 feet  
 1 furlong = 40 rods = 10 chains = 1/8 mile  
 1 mile = 320 rods = 80 chains = 5,280 feet  
 1 arpent = 0.84625 acre  
 1 acre = 4 roods = 160 square rods = 43,560 square feet  
 1 square mile = 640 acres  
 1 hide = 120 acres  
 32.993 inches < 1 vara < 33.87 inches  
 1 labor = 177.14 acres = 1 million varas  
 1 league (as a unit of length) = approximately 3 miles  
 1 league (as a unit of area) = 25 labors = approximately 4,428 acres (Texas)  
 or 4,439 acres (California)  
 1 morgen = 0.6309 acre

**Square Measure**

144 square inches = 1 square foot  
 9 square feet = 1 square yard  
 43,560 square feet = 1 acre  
 640 acres = 1 square mile

**Board Measure**

1 board foot = 144 cubic inches  
 1 board foot = 1' × 1' × 1"  
 1 ton round timber = 40 cubic feet  
 1 ton hewn timber = 40 cubic feet

**Nautical Measure**

1.852 kilometers = 1 nautical mile  
 1.150779 statute miles = 1 nautical mile  
 6,076.11549 feet = 1 nautical mile  
 1 nautical mile per hour = 1 knot  
 6 feet = 1 fathom  
 120 fathoms = 1 cable length

**Measures [continued]****The English System [continued]****Engineer's Chain**

12 inches = 1 link

100 links or 100 feet = 1 chain

52.8 chains = 1 mile

**Dry Measure—Grain, Fruit, etc.**

2 pints (pt.) = 1 quart (qt.) = 67.20 cu. in. = 1.1012 liters (l.)

8 quarts = 1 peck (pk.) = 537.61 cu. in. = 8.8096 l.

4 pecks = 1 bushel (bu.) = 2,150.42 cu. in. = 35.2383 l.

1 imperial dry quart = 1.0320 U.S. dry quarts

Legal avoirdupois weight as fixed by U.S. government of 1 bushel (bu.) of:

wheat = 60 lb.

barley = 48 lb. (varies from 32 to 50 lb. in various states)

oats = 32 lb.

rye = 56 lb.

corn = varies from 52 to 56 lb. in various states

Indian corn = 56 lb.

potatoes = 60 lb. (North Carolina and West Virginia, 56 lb.)

**Liquid Measure**

4 gills (gi.) = 1 pint (pt.) = 28.875 cu. in. = 0.4732 liter (l.)

2 pints = 1 quart (qt.) = 57.75 cu. in. = 0.9463 l.

4 quarts = 1 gallon (gal.) = 231 cu. in. = 3.7853 l.

31½ gallons = 1 barrel

**Measures [continued]****The Metric System****Measures of Length**

- 10 millimeters (mm.) = 1 centimeter (cm)  
 10 centimeters = 1 decimeter (dm)  
 10 decimeters = 1 meter (m)  
 10 meters = 1 dekameter (Dm)  
 10 dekameters = 1 hektometer (Hm)  
 10 hektometers = 1 kilometer (km)  
 1 meter = 39.37 inches = 3.28083 feet = 1.0936 yards  
 1 centimeter = 0.3937 inch  
 1 millimeter = 0.03937 inch, or approximately 1/25 in.  
 1 kilometer = 0.62137 mile  
 1 foot = 0.3048 meter  
 1 inch = 2.54 centimeters = 25.4 millimeters  
 1 yard = 0.9144 meter  
 1 rod = 5.029 meters  
 1 mile = 1.6093 kilometers

Myriameter	10,000 meters	6.2137 miles
Kilometer	1,000 meters	0.62137 mile
Hectometer	100 meters	328 feet 1 inch
Dekameter	10 meters	393.7 inches
Meter	1 meter	39.37 inches
Decimeter	0.1 meter	3.937 inches
Centimeter	0.01 meter	0.3937 inch
Millimeter	0.001 meter	0.0394 inch

**Measures of Surface**

- 1 square meter = 10.764 square feet = 1.196 square yards = 1 centiare  
 1 square centimeter = 0.155 square inch  
 1 square millimeter = 0.00155 square inch  
 1 square yard = 0.836 square meter  
 1 square foot = 0.0929 square meter  
 1 square inch = 6.452 square centimeters = 645.2 square millimeters  
 1 square rod = 25.29 square meters  
 1 acre = 0.4046 hectare  
 1 square mile = 259 hectares

Cuerda	3,930.40 square meters	0.97123 acre
Hectare	10,000 square meters	2.471 acres
Are	100 square meters	119.6 square yards
Centiare	1 square meter	1,550 square inches

**Measures [continued]****The Metric System [continued]****Measures of Volume and Capacity**

1 cubic meter = 35.314 cubic feet = 1.308 cubic yards = 264.2 gallons  
= 231 cubic inches

1 cubic decimeter = 61.023 cubic inches = 0.0353 cubic feet

1 cubic centimeter = 0.061 cubic inch

1 liter = 1 cubic decimeter = 61.023 cubic inches = 0.0353 cubic feet  
= 1.0567 quarts (U.S.) = 0.2642 gallon (U.S.)  
= 2.202 lbs. of water at 62° F

1 cubic yard = 0.7645 cubic meter

1 cubic foot = 0.02832 cubic meter = 28.317 cubic decimeters = 28.317 liters

1 cubic inch = 16.393 cubic centimeters

Cord	3.625 steres
Liquid quart (U.S.)	0.9463 liter
Dry quart (U.S.)	1.101 liters
Quart (imperial)	1.136 liters
Gallon (U.S.)	3.785 liters
Gallon (imperial)	4.546 liters
Peck (U.S.)	8.810 liters
Peck (imperial)	9.092 liters
Bushel (U.S.)	35.24 liters
Bushel (imperial)	36.37 liters

**Measures of Weight**

1 gram = 15.432 grains

1 kilogram = 2.2046 pounds

1 metric ton = 0.9842 ton of 2,240 lbs. = 19.68 hundredweight (cwt.)  
= 2,204.6 lbs.

1 grain = 0.0648 gram

1 ounce avoirdupois = 28.35 grams

1 ounce Troy = 31.103 grams

1 pound avoirdupois = 0.4536 kilogram

1 pound Troy = 0.3732 kilogram

1 long ton = 1.0160 metric tons

1 short ton = 0.9072 metric ton

1 kip (used to express dead load) = 1,000 pounds

**Miscellaneous**

1 kilogram per meter = 0.6720 pound per foot

1 gram per square millimeter = 1.422 pounds per square inch

1 kilogram per square meter = 0.2084 pound per square foot

1 kilogram per cubic meter = 0.0624 pound per cubic foot

1 degree centigrade = 1.8 degrees Fahrenheit

**Measures [continued]****The Metric System [continued]**

- 1 pound per foot = 1.488 kilograms per meter
- 1 pound per square foot = 4.882 kilograms per square meter
- 1 pound per cubic foot = 16.02 kilograms per cubic meter
- 1 degree Fahrenheit = 0.5556 degree centigrade
- 1 calorie (French thermal unit) = 3.968 Btu (British thermal units)
- 1 therm = 100,000 Btu
- 1 ton of air conditioning = 12,000 Btu of heat removal per hour
- 1 horse power = 33,000 foot pounds per minute = 746 watts
- 1 watt (unit of electrical power) = 0.00134 horse power
  - = 44.22 foot pounds per minute
- 1 kilowatt = 1,000 watts
  - = 44,220 foot pounds per minute
  - = 1.34 horse power
- 1 kilowatt-hour (unit of power consumption) = 1,000 watt-hours
- 1 candle (measure of light intensity) = light from a 78-inch sperm candle burning at the rate of 120 grains per hour

**Conversion Factors for Measurement of Irrigation Water**

- 1 second-foot = 1 cubic foot per second
  - = 450 gallons per minute
  - = about 1 acre-inch per hour
- 1 cubic foot of water = 7.48 gallons
- A body of water under a head of 4 inches delivers through a hole 1 inch square 1/50 of a second-foot.
- Legal miner's inch (California statutes, 1901) = 1½ cubic feet per minute, measured under a 6-inch pressure, and is equivalent to a flow of 11¼ gallons per minute, or 1/40 cubic foot per second
- In practice, a miner's inch = 9 gallons per minute
  - = 1/50 cubic foot per second
- 1 acre-inch = 27,152 gallons, and will be supplied by a flow of 1 miner's inch in 50.4 hours

**Measures [continued]****Formula for Measuring Irrigation Water**

1. Water measurement unit—cubic feet per second or second-feet

$$\frac{\text{Number of second-feet} \times \text{hours run}}{\text{Number of acres}} = \text{Acre-inches or inches depth on whole area}$$

2. Water measurement unit (Southern California)—miner's inch, 1/50 second-foot or 9 gallons per minute

$$\frac{\text{Number of miner's inches} \times \text{hours run}}{50 \times \text{number of acres}} = \text{Acre-inches}$$

3. Water measurement unit—statutory inches (1/40 second-foot or 11¼ gallons per minute)

$$\frac{\text{Number of miner's inches} \times \text{hours run}}{40 \times \text{number of acres}} = \text{Acre-inches}$$

4. Pump—gallons per minute

$$\frac{\text{Gallons per minute} \times \text{hours run}}{450 \times \text{number of acres}} = \text{Acre-inches}$$

**Water Measure**

$$1 \text{ cubic foot} = 7.4805 \text{ gallons} = 62.42 \text{ pounds}$$

$$1 \text{ gallon} = 8.355 \text{ pounds}$$

- 1 cubic foot per second = 50 miner's inches in Idaho, Kansas, Nebraska, New Mexico, and Southern California

- 1 cubic foot per second = 40 miner's inches in Arizona, Montana, Oregon, and Northern California

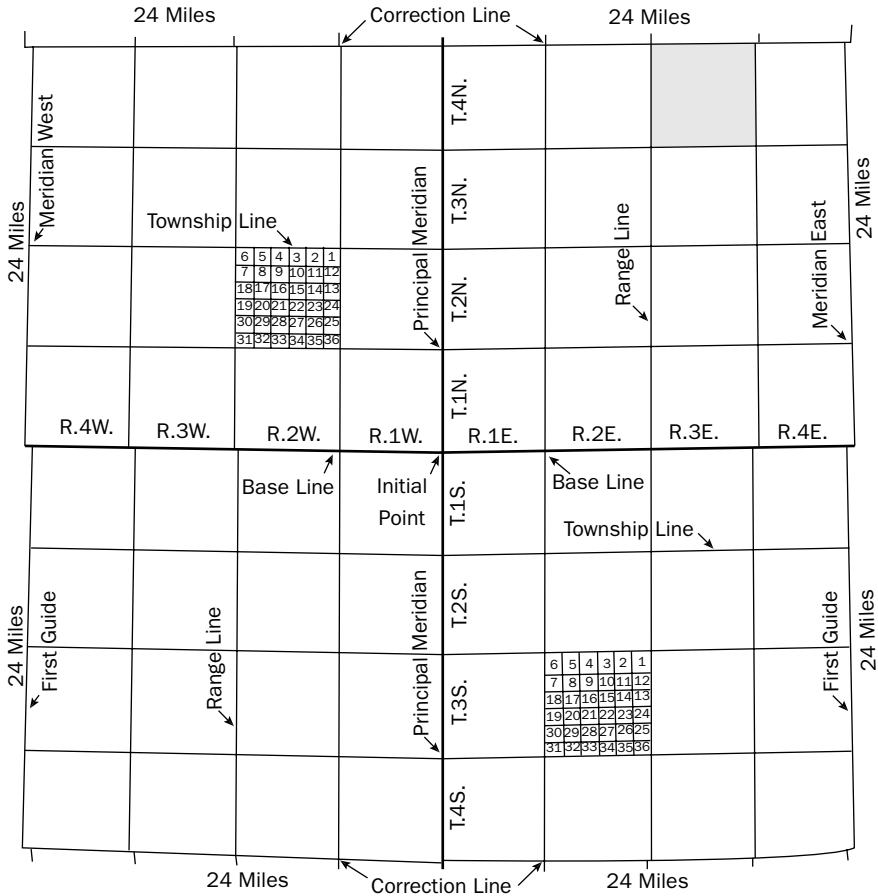
**Measures [continued]****Selected Conversions to Metric Measures**

<b>LENGTH</b>	<b>Symbol</b>	<b>When you know</b>	<b>Multiply by</b>	<b>To find</b>	<b>Symbol</b>
	in.	inches	2.540	centimeters	cm
	ft.	feet	30.480	centimeters	cm
	yd.	yards	0.9144	meters	m
	mi.	miles	1.6093	kilometers	km
<b>AREA</b>					
	in. <sup>2</sup>	square inches	6.542	sq. centimeters	cm <sup>2</sup>
	ft. <sup>2</sup>	square feet	0.0929	sq. meters	m <sup>2</sup>
	yd. <sup>2</sup>	square yards	0.836	sq. meters	m <sup>2</sup>
	mi. <sup>2</sup>	square miles	2.590	sq. kilometers	km <sup>2</sup>
		acres	0.4046	hectares	ha
<b>MASS (weight)</b>					
	oz.	ounces	28.35	grams	g
	lb.	pounds	0.4536	kilograms	kg
		short tons (2,000 lbs.)	0.9072	tonnes (1,000 kg)	t
<b>CAPACITY (liquid measure)</b>					
	fl. oz.	fluid ounces	29.573	milliliters	ml
	pt.	pints	0.4732	liters	l
	qt.	quarts	0.9463	liters	l
	gal.	gallons	3.7853	liters	l
<b>CAPACITY (dry measure)</b>					
	pt.	pints	0.5506	liters	l
	qt.	quarts	1.1012	liters	l
	gal.	gallons	4.545	liters	l
	pk.	pecks	0.009	cubic meters	m <sup>3</sup>
	bu.	bushels	0.036	cubic meters	m <sup>3</sup>
<b>VOLUME</b>					
	in. <sup>3</sup>	cubic inches	16.393	cubic centimeters	cm <sup>3</sup>
	ft. <sup>3</sup>	cubic feet	0.028	cubic meters	m <sup>3</sup>
	yd. <sup>3</sup>	cubic yards	0.765	cubic meters	m <sup>3</sup>
<b>TEMPERATURE (exact)</b>					
	° F	Fahrenheit	5/9 (after subtracting 32)	Celsius	° C

**Measures [continued]****Selected Conversions from Metric Measures**

<b>LENGTH</b>	<b>Symbol</b>	<b>When you know</b>	<b>Multiply by</b>	<b>To find</b>	<b>Symbol</b>
	mm	millimeters	0.0394	inches	in.
	cm	centimeters	0.3937	inches	in.
	m	meters	3.28083	feet	ft.
	m	meters	1.0936	yards	yd.
	km	kilometers	0.62137	miles	mi.
<b>AREA</b>					
	cm <sup>2</sup>	square centimeters	0.155	sq. inches	in. <sup>2</sup>
	m <sup>2</sup>	square meters	1.196	sq. yards	yd. <sup>2</sup>
	km <sup>2</sup>	square kilometers	0.386	sq. miles	mi. <sup>2</sup>
	ha	hectares (10,000 m <sup>2</sup> )	2.471	acres	
<b>MASS (weight)</b>					
	g	grams	0.035	ounces	oz.
	kg	kilograms	2.2046	pounds	lb.
	t	tonnes (1,000 kg)	1.1023	short tons (2,000 lbs.)	
<b>CAPACITY (liquid measure)</b>					
	ml	milliliters	0.0338	fluid ounces	fl. oz.
	l	liters	2.1134	pints	pt.
	l	liters	1.0567	quarts	qt.
	l	liters	0.2642	gallons	gal.
<b>CAPACITY (dry measure)</b>					
	l	liters	1.8162	pints	pt.
	l	liters	0.9081	quarts	qt.
	l	liters	0.2270	gallons	gal.
	m <sup>3</sup>	cubic meters	111.1111	pecks	pk.
	m <sup>3</sup>	cubic meters	27.7778	bushels	bu.
<b>VOLUME</b>					
	cm <sup>3</sup>	cubic centimeters	0.00006	cubic inches	in. <sup>3</sup>
	m <sup>3</sup>	cubic meters	35.7143	cubic feet	ft. <sup>3</sup>
	m <sup>3</sup>	cubic meters	1.3072	cubic yards	yd. <sup>3</sup>
<b>TEMPERATURE (exact)</b>					
	° C	Celsius	9/5 (then add 32)	Fahrenheit	° F

**U.S. Public Survey Diagram**



Description of the shaded township: Township 4 North. Range 3 East (T.4N., R.3E.). The township is four township rows north of the baseline and three range lines east of the principal meridian. (The township is located in northern California, so the baseline and principal meridian may be further identified as Mt. Diablo Base and Meridian.)

Source: John S. Hoag, *Fundamentals of Land Measurement* (Chicago: Chicago Title and Insurance Company, 1976), 8. Reprinted through the courtesy of Chicago Title Insurance Company.

**U.S. Public Survey Diagram**

← One Mile = 320 Rods = 80 Chains = 5,280 Feet →

20 Chains - 80 Rods  W <sup>1</sup> / <sub>2</sub> N.W <sup>1</sup> / <sub>4</sub> 80 Acres  1,320 Feet	20 Chains - 80 Rods  E <sup>1</sup> / <sub>2</sub> N.W <sup>1</sup> / <sub>4</sub> 80 Acres  1,320 Feet	40 Chains - 160 Rods  N.E <sup>1</sup> / <sub>4</sub> 160 Acres  2,640 Feet					
N.W <sup>1</sup> / <sub>4</sub> S.W <sup>1</sup> / <sub>4</sub> 40 Acres	N.E <sup>1</sup> / <sub>4</sub> S.W <sup>1</sup> / <sub>4</sub> 40 Acres	N <sup>1</sup> / <sub>2</sub> N.W <sup>1</sup> / <sub>4</sub> S.E <sup>1</sup> / <sub>4</sub> 20 Acres		W <sup>1</sup> / <sub>2</sub> N.E <sup>1</sup> / <sub>4</sub> S.E <sup>1</sup> / <sub>4</sub> 40 Acres 20 Chains	E <sup>1</sup> / <sub>2</sub> N.E <sup>1</sup> / <sub>4</sub> S.E <sup>1</sup> / <sub>4</sub> 40 Acres 20 Chains		
		S <sup>1</sup> / <sub>2</sub> N.W <sup>1</sup> / <sub>4</sub> S.E <sup>1</sup> / <sub>4</sub> 20 Acres 20 Chains					
S.W <sup>1</sup> / <sub>4</sub> S.W <sup>1</sup> / <sub>4</sub> 40 Acres  80 Rods	S.E <sup>1</sup> / <sub>4</sub> S.W <sup>1</sup> / <sub>4</sub> 40 Acres  1,320 Feet	N.W <sup>1</sup> / <sub>4</sub> S.W <sup>1</sup> / <sub>4</sub> S.E <sup>1</sup> / <sub>4</sub> 10 Acres	N.E <sup>1</sup> / <sub>4</sub> S.W <sup>1</sup> / <sub>4</sub> S.E <sup>1</sup> / <sub>4</sub> 10 Acres	5 Acres	5 Acres	5 Acres	5 Acres
		10 Acres		1 Furlong		5 Chns, 20 Rd.	
		S.W <sup>1</sup> / <sub>4</sub> S.W <sup>1</sup> / <sub>4</sub> S.E <sup>1</sup> / <sub>4</sub> 10 Acres	S.E <sup>1</sup> / <sub>4</sub> S.W <sup>1</sup> / <sub>4</sub> S.E <sup>1</sup> / <sub>4</sub> 10 Acres	2 <sup>1</sup> / <sub>2</sub> Acres	2 <sup>1</sup> / <sub>2</sub> Acres	10 Acres may be subdivided into about 80 lots of 30' x 125' each	
		660 Ft.	660 Ft.	330 Ft.	330 Ft.		

**Energy Conversion Factors**

The common unit of energy measure is the British thermal unit (Btu), which is the unit used to calculate and compare energy costs and savings. To convert between the common energy units, use the factors in this table.

<b>To Convert</b>	<b>Into</b>	<b>Multiply by</b>
Barrels, oil	gallons	42.0
Cubic feet, natural gas	therms	0.01
Cubic feet, natural gas	Btus	1,020
Gallons, No. 2 oil	Btus	138,000*
Gallons, No. 4 oil	Btus	145,000*
Gallons, No. 5 oil	Btus	148,000*
Gallons, No. 6 oil	Btus	150,000*
Gallons, kerosene	Btus	135,000*
Gallons, gasoline	Btus	125,000*
Gallons, diesel oil	Btus	138,700*
Horsepower-hours	Btus	2,544
Horsepower-hours	kWhs	0.7457
Horsepower	Btus/min	42.4176
Horsepower (boiler)	Btus/hr	33,479
Kilowatt-hours	Btus	3,413
mCF natural gas	Btus	1,000,000
Short ton, eastern steam coal	Btus	23,100,000*
Short tons, western coal	Btus	21,000,000*
Short tons, anthracite coal	Btus	25,400,000
Short tons, bituminous steam coal	Btus	21,600,000
Short tons, lignite, brown coal	Btus	14,000,000
Steam, saturated (lbs.)	Btus	970
Therms, natural gas	cubic feet	100
Therms, natural gas	Btus	100,000
Tons, refrigeration	Btus/hr	12.000

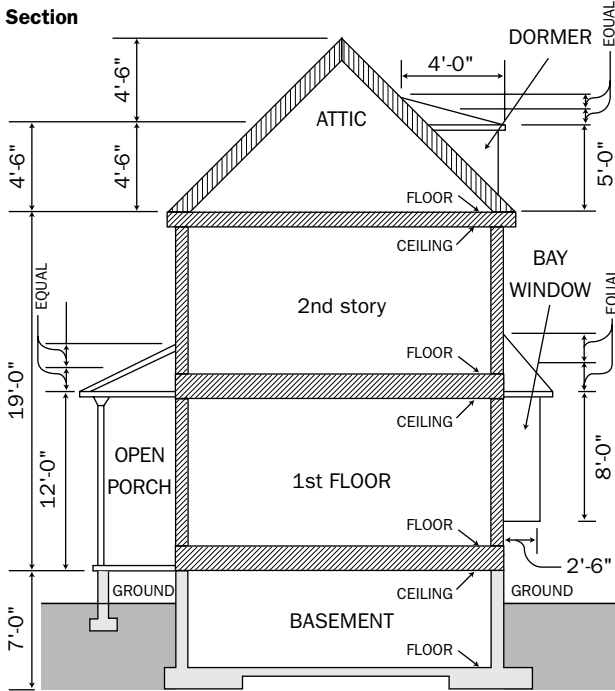
\* These are average values. Since exact Btu content varies with type and source, contact supplier when extreme accuracy is essential.

**Conversion of Chains to Rods and Feet**

Chains	Rods	Feet	Chains	Rods	Feet	Chains	Rods	Feet
1	4	66	15	60	990	28	112	1,848
2	8	132	16	64	1,056	29	116	1,914
3	12	198	17	68	1,122	30	120	1,980
4	16	264	18	72	1,188	31	124	2,046
5	20	330	19	76	1,254	32	128	2,112
6	24	396	20	80	1,320	33	132	2,178
7	28	462	21	84	1,386	34	136	2,244
8	32	528	22	88	1,452	35	140	2,310
9	36	594	23	92	1,518	36	144	2,376
10	40	660	24	96	1,584	37	148	2,442
11	44	726	25	100	1,650	38	152	2,508
12	48	792	26	104	1,716	39	156	2,574
13	52	858	27	108	1,784	40	160	2,430
14	56	924						

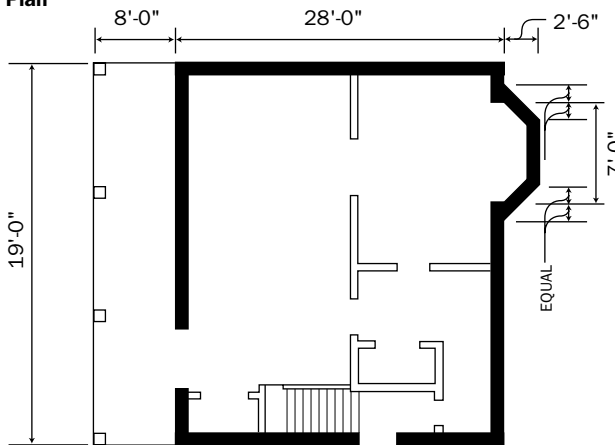
**Cubic Contents Computation**

**Section**



Cubic Computation	Cubic Feet
Attic $28' \times 26' \times 4.5'$	3,276
Main portion of the building $28' \times 26' \times 19'$	13,832
Basement $28' \times 26' \times 7'$	5,096
Open porch* $\frac{8' \times 26' \times 12'}{3}$	832
Bay window $2.5' \times 7' \times 8'$	140
Dormer $\frac{4' \times 8' \times 5'}{2}$	80

**Plan**



\* If enclosed, divisor should be 2. If enclosed, finished, and heated, consider as part of the house and use actual cube.