

CONVERSION FACTORS AND HANDY EQUATIONS

LENGTH CONVERSION FACTORS

12 inches = 1 foot
 3 feet = 1 yard
 1760 yards = 5280 feet = 1 mile
 board feet = $\frac{\text{board width} \times \text{height}}{12}$ lineal ft

AREA CONVERSION FACTORS

1 acre = 43,560 sqft
 ft x ft = sqft = ft^2
 sheet of plywood = 4 ft x 8 ft = 32 sqft
 square of roofing = 100 sqft

VOLUME CONVERSION FACTORS

ft x ft x ft = cubic ft = ft^3
 yd x yd x yd = cubic yards = cu yd = yd^3
 3 ft x 3 ft x 3 ft = 27 cuft = 1 cu yd
 1 gallon = 7.5 cuft = 231 cubic inches
 1 gallon water = 8.35 lbs
 1 cu ft = 7.49 gallons = 1728 cu in

METRIC SYSTEM CONVERSION FACTORS

mm = millimeter (1 one thousandth of a meter)
 cm = centimeter (1 one-hundredth of a meter)
 km = kilometer (one thousand meters)
 1 meter = 39.37 inches = 3.28 feet
 1 inch = 2.54 cm 1 mm = 0.04 inch
 1 ft = 0.31 meters 1 yd = 0.91 meters
 1 cu ft = 28.32 liters 1 cu meter = 35.31 cu ft
 1 cu meter = 1000 liters = 264.2 US gallons
 1 gallon = 3.785 liters
 1 kilogram = 2.2 lbs
 1 sq meter = 10.76 sq ft
 1 acre = 0.40 hectare

 1 sq mile - 259 hectares
 1 lb - 0.45 kilograms

LENGTH EQUATIONS

diameter = 2 x radius
 $\text{side}^2 \times \text{side}^2 = \text{hypotenuse}^2$ (right triangle)
 $a^2 + b^2 = c^2$ (Pythagorean Theorem)
 circumference = $\pi \times \text{diameter}$

AREA EQUATIONS

area triangle = $(\text{base} \times \text{height}) / 2$
 area rectangle or square = length x width
 area circle = $\pi \times \text{radius}^2$

VOLUME EQUATIONS

volume of cylinder = $\pi \times \text{radius}^2 \times \text{height}$
 volume of a block = length x width x depth

$A+B+C=180^\circ$	$a^2 + b^2 = c^2$	$\text{area} = (\text{bxh})/2$
<p>r = radius d = diameter = 2 x r c = circumference</p>		
$\text{volume} = \text{area} \times \text{height}$ $= (L \times W) \times H$	$\text{volume} = \text{area} \times \text{height}$ $= (\text{radius}^2 \times \pi) \times H$	

LINEAL FEET VS. BOARD FEET

Lumber Size	Lineal Feet	Board Feet
1x2	1	1/6 or 0.17
1x6	1	1/2 or 0.5
1x12	1	1
2x4	1	2/3 or 0.67
2x6	1	1
2x8	1	4/3 or 1.3
2x12	1	2
4x4	1	4/3 or 1.3
4x6	1	2

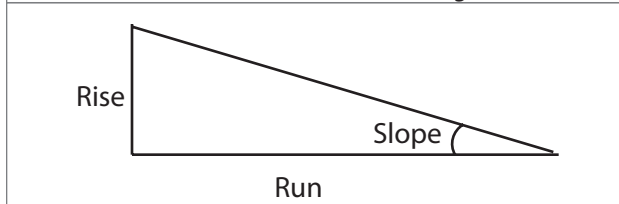
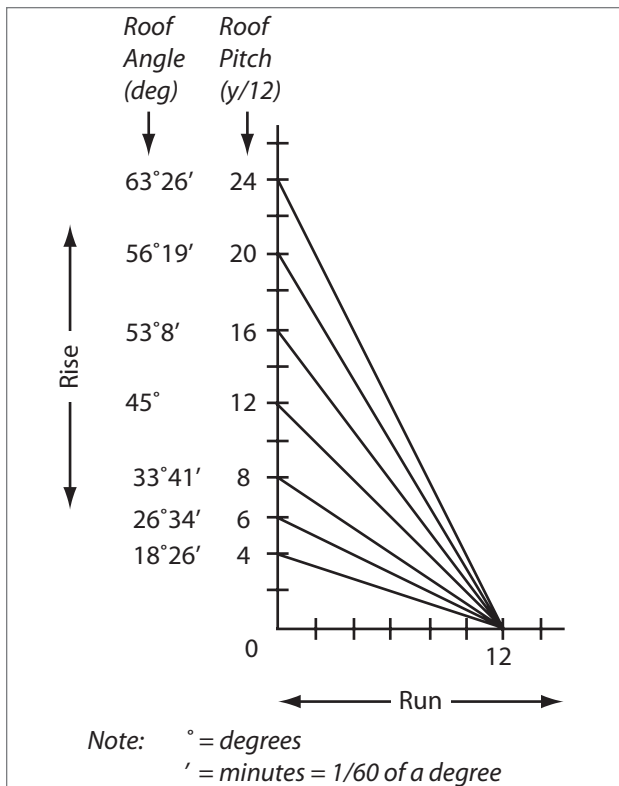
FRACTION VS. DECIMAL VALUES

Fraction	Also =	Decimal
1/16	-	0.06
2/16	1/8	0.125
3/16	-	0.18
4/16	1/4	0.25
5/16	-	0.31
-	1/3	0.33
6/16	3/8	0.375
7/16	-	0.43
8/16	1/2	0.50
9/16	-	0.56
10/16	5/8	0.625
-	2/3	0.67
11/16	-	0.68
12/16	3/4	0.75
13/16	-	0.81
14/16	7/8	0.875
15/16	-	0.93
16/16	1	1.00

PIPE SIZE VS. PIPE AREA

Pipe Size (in)	Pipe Area (sqin)
1/2	0.19
3/4	0.43
1	0.78
1 1/4"	1.22
1 1/2"	1.75

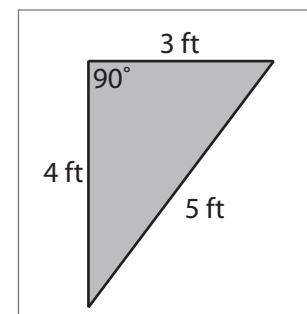
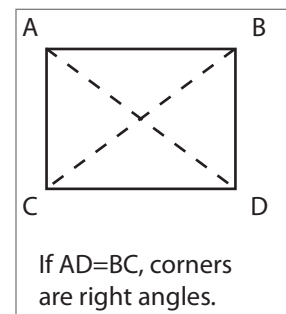
ROOF ANGLE VS. ROOF PITCH (y/12)



CONFIRMING LAYOUT OF A RIGHT ANGLE

Equal Diagonals

3-4-5 or 6-8-10 Triangles



SOME MATH SYMBOLS

- < less than
- > greater than
- a/b a fraction = $a \div b$
- $\sqrt{\quad}$ square root
- LF lineal feet
- bf board feet