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THE FEET INCHES SIXTEENTHS CALCULATOR WITH INSTANT CONVERSION BETWEEN ALL MODES

The **JOBBER 6** was developed especially for use by anyone connected with the **building** and **construction** industry.

JOBBER 6 ***has "FIVE" different dimensional formats with instant conversion between all formats.***

1. Feet, inches & fractions
2. Decimal (of feet)
3. Inches & fractions
4. Decimal (of inches)
5. Metric (millimeters, meters)

All will work with the many built-in math programs.

This means that complex calculations can be made without the use of charts or tables, thus decreasing errors and increasing production.

The primary difference between the **JOBBER 6** and other calculators is its use of its special keyboard of **0** to **15** instead of **0** to **9**. This allows inches and fractions to be entered with a single keystroke each.

NOTE THIS FEATURE

A feature requested by many Jobber users is that they would like to be able to set the calculator to work only in **16th** and not convert to lower case denominator fractions. This is accomplished by pressing the [FIS] key a second time. However, if you want to go to lower case fraction again, press the [FIS] key again, as it will switch back and forth.

6 – DIFFERENT MODES

	KEYS TO PRESS
① Feet, inches & fractions	FIS
② Decimal (of feet)	DEC
③ Metric (millimeters)	MM
④ Metric (meters)	INV MM

NOTE: When in the meter mode the MET.MM in the display will be flashing

⑤ Inches and fractions	INCH
⑥ Decimal inches	INCH INCH (Press 2 times)

Each Mode may be interchanged at any time. Thus, you can convert any (FIS) dimension to Decimal or Metric, and vice versa with a single keystroke.

With an incorrect entry or answer beyond the range of the calculator, the display will show "error." To clean an error condition you must press the "CLR" button.

In the Decimal and Metric Modes, the display capacity is SEVEN digits, or "9999999."

In the FIS Mode, the display capacity is EIGHT digits showing a maximum dimension of 99,999 feet, 11 inches and 15 sixteenths.

AUTOMATIC SHUT OFF

Your Calculator is designed to shut itself off after a few minutes of non-use. However, any values stored in the memories will be retained. Also any data in the triangle mode is retained and can be recalled by pressing the INV key first and then any one of the triangle keys.

KEY DEFINITIONS

ON

FIS This key turns the calculator **on** and activates the **feet**, **inch**, and **fraction mode**. It will also convert any displayed dimensions from other dimensional modes to the FIS mode.

▶

CLR The CLEAR KEY - **Press once** clears the last entry and the display; **press twice** in succession clears all temporary registers.

▶

Press INV CLR and it will backspace, deleting one keystroke at a time.

MEMORIES – **JOBBER "6"** has **6** Permanent Memories.
Values stored in these memories are not lost when calculator goes off. One of these memories is separated from the other 5 memories.

DMS DMS
MEM and RCL are the memory keys located to the right of the 15 and 12 keys. This memory is referred to as the Quick Memory because it requires only One Key In and One Key Out.

The other five memories work with the Memory Keys that are located on the left side of the DEC and MM keys. These memories require use of Two Keystrokes to store a value in them and Two Keystrokes to recall the stored value.

To Store the Value that is in the Display in these Memories:

MEM+ M1 M2 M3 M4 M5
First press MEM Then press 1 or 2 or 3 or 4 or 5 depending on the memory you choose to use.

To Recall the Stored Value in these Memories:

MEM– M1 M2 M3 M4 M5
First press RCL Then press 1 or 2 or 3 or 4 or 5 depending on the memory you choose to recall,

When these memories have a stored value in them a small M1 - M2 - M3 will light up in the display. MEM M4 and M5 will not light up in the display. You can press RCL M4 or M5 to see if they have a stored value in them.

To clear these memories – first clear the display with only zeros "0" showing in the display.

Then press [MEM] and [M1 1] or [M2 2] or [M3 3] or [M4 4] or [M5 5] depending on the memory you wish to clear. Then the small M1 - M2 - M3 in the display will go out, indicating the memory is clear. M4 and M5 are cleared in the same manner but have no display light to go out.

If a memory already has a value in it, but you wish to store a new value in it, it is not necessary to clear the memory before entering the new value. Just enter it as explained earlier. The new value will be stored and the previous value is cleared automatically.

EXAMPLE - Put 7' - $10^3/_4$ in MEM-1
Put tangent .645833 in MEM-3 for later use

REMARKS	KEYSTROKES	DISPLAY READS
Enter 7'-$10^3/_4$	[7] [10] [12] [MEM] [M1 1]	7 – 10 – $^3/_4$
Enter .645833	[.] [6] [4] [5] [8] [3] [3] [MEM] [M3 3]	.645833
Clear Display	[CLR]	0.
Go to FIS Mode	[FIS]	0 – 0 – 0
Recall MEM-1	[RCL] [M1 1]	7 – 10 – $^3/_4$
Recall MEM-3	[RCL] [M3 3]	$7^3/_4$
Go to DEC. Mode	[DEC]	.645833

These same 5 Memories can also be used as Accumulative Memories.

By pressing the [INV] key first the
[MEM+ MEM] becomes **Memory Plus** (Adds to Memory).
The [MEM– RCL] becomes **Memory Minus** (Subtracts from Memory).

EXAMPLE Use the accumulative memories to total these dimensions: **4'-6** + **14'-8$^1/_2$** + **10'-10** – **6'-1$^1/_2$** and put them in **MEM. 2**.

REMARKS	KEYSTROKES	DISPLAY READS
Enter 4'-6	[4] [6] [0] [INV] [MEM+ MEM] [M2 2]	4 – 6 – 0
Add 14'-8$^1/_2$	[1] [4] [8] [8] [INV] [MEM+ MEM] [M2 2]	14 – 8 – $^1/_2$
Add 10'-10	[1] [0] [10] [0] [INV] [MEM+ MEM] [M2 2]	10 – 10 – 0
Subtract 6'-1$^1/_2$	[6] [1] [8] [INV] [MEM– RCL] [M2 2]	6 – 1 – $^1/_2$
Now find the Total	[RCL] [M2 2]	23 – 11 – 0
To Clear MEM-2	[CLR] [MEM+ MEM] [M2 2]	0 – 0 – 0

NOTE: Having values stored in the memories does not pull the batteries down.

KEYSTROKES

★
SHIFT

[INV] The **RED INVERT** key is a very important key as it has many functions when used in conjunction with other keys. (The invert key should be pressed first.)

It activates the 2nd function for most of the keys on the keyboard. When pressed two dashes between the fractions will start flashing

KEY DEFINITIONS

[DEC] This key activates the **Decimal of Feet Mode** and converts any other displayed value to the equivalent in Decimal of Feet. **In this mode the calculator can be used as a standard calculator.**

DEC
[INCH] This key activates the **Inch Mode** and converts any other displayed dimension to **inches and fractions** or press [INCH] key a **second time** and go into the **Decimal Inch Mode**.

[HIP] This key will automatically calculate the **Hip/Valley Pitch** of a 45° Hip/Valley roof.

FIRST: Recall or put the actual roof pitch in the display. Then press the [HIP] key and the calculator will instantly display the calculated **Tangent for pitch** of the Hip/Valley beam.

This **HIP Tangent** can then be put in the [PITCH] for solving triangles. Then anything you desire to know can be calculated using the [RISE] [RUN] [SLP] keys.

[NOTE:] If you already had the actual roof pitch in the triangle mode [PITCH] key you may wish to recall and store it in one of the memories for easy recall and later use, before putting the [HIP] Tangent in the [PITCH].

To find the plumb or vertical cut degree for the hip beam press [INV] [TAN] when the hip pitch is in the display.

[INV] [TAN] will convert the tangent value or pitch that is displayed to a decimal degree or angle.

ø
[INV] [0] **CIRCLE MODE**: These keys put the calculator in the **CIRCLE MODE** which activates all the parts for solving a circle and circle segiments. As identified above, the orange keys.

[INV] [•] **SEGMENTED RISE MODE**: While in the Circle Mode with values in the circle keys. Pressing these keys will activate the segimented rise function which **gives the rise** at various points along the cord from the cord to the arc.

KEY DEFINITIONS

JACK
[INV] [DEC] **JACK RAFTER MODE**: Jack lengths are automatically calculated for 45 degree roofs, starting from longest to shortest using any set on-center spacing, and based on the regular roof data that is in the triangle pitch, rise, run keys.

RK-UP
[INV] [13] **RAKE-UP MODE**: This function automatically calculates the rise dimension along a triangle base at various set spaces, using the values that are stored in the pitch, rise, run triangle keys. This feature is ideal for calculating roof or grade rise.

RK-DN
[INV] [14] **RAKE-DOWN MODE**: This function automatically finds the decreasing stud length or rise dimension in a raked wall or sloping plane at various set spaces, based on the values stored in the pitch, rise, run triangle keys.

CU. YD.
[INV] [15] **CUBIC YARDS**: These keys automatically convert the displayed calculation into cubic yards.

SQ. YD.
[INV] [X] **SQUARE YARDS**: These keys automatically convert the displayed calculation into square yards.

REM
[INV] [÷] **REMAINDER**: Displays the remainder value when a FIS dimension is divided by a whole number.

BD.FT
[INV] [+/-] **BOARD FEET**: Converts the cubic value of material shown in the display to Board Feet.

$^1/_x$
[INV] [–] Activates $^1/_x$ which divides the displayed value (x) into one.

TAPE
[INV] [=] **PAPERLESS TAPE**: Activates the paperless tape mode which allows the user to review the **last 16** entries or sub-totals. A small "T" will show up in the display when activated. Then press the [–] or [+] keys to scroll forward or backward through the data. If you find a dimension you want to use press the [=] key and proceed as normal.

KEY DEFINITIONS

DMS
INV MEN **DEGREES-MINUTES-SECONDS (INPUT)**: Allows the input of degrees, minutes and seconds into the calculator.

DMS
INV RCL **DEGREES-MINUTES-SECONDS**: This function will convert a decimal degree that is shown in the display to degrees, minutes and seconds.

SIN
INV 6 **SINE**: This function will calculate the sine of a degree or value displayed.

INV. SIN
INV 7 **INV SINE**: This function will calculate the smallest relative angle of the displayed sine value.

COS
INV 8 **COSINE**: This function will calculate the cosine of the displayed value.

INV. COS
INV 9 **INVERT COSINE**: This function will calculate the smallest relative angle for the displayed cosine value.

AREA
INV 10 **AREA** (for circles and triangles): When in the Circle Mode with a given diameter or radius, this function will give the **area of the circle**. Also, it will give the **area for any triangle** that is in the Triangle Mode.

$\sqrt{\ }$
INV X^2 **SQUARE ROOT**: This function will calculate the (square root) of the number shown in the display.

▶
INV CLR **BACK SPACE**: This function will delete the entries one keystroke at a time. (Unlike the clear function which deletes the entire entry.)

LGTH
INV HIP **HIP/VALLEY BEAM LENGTH**: With the roof dimension for the common rafters in the Triangle Mode, PITCH, RISE, RUN press these keys to find the developed length of the hip/val beam for a 45° roof system

INV PITCH RECALLING TANGENT OR PITCH

The actual Tangent Pitch that the calculator is working within the triangle mode can be recalled by pressing INV PITCH in the DEC Mode or by converting the FIS PITCH to the Decimal Mode by pressing the DEC key.

NOTE: It is very important that you never **try to recall** the PITCH without first pressing the INV key, as you will erase or change its value to what is in the display, or unless you have already recalled one of the three triangle sides, by pressing INV RUN or INV RIS or INV SLP .

x^2 Squares any number displayed.

π Displays the value of Pi truncated to the 7th digit.

TAN This key calculates the TANGENT of the displayed degree or value.

DEG **DEGREE**

This key will input a degree into the triangle mode and automatically adjust the pitch accordingly, or will give the degree value for the pitch.

SPAC **SET DEFAULT SPACE KEY**

This key sets the default spacing dimension for the (Rake-Up) (Rake-Down) (Jack) and (Segmented Rise) functions. (The spacing must be set before these functions are activated.) After they are activated this key will let a special spacing be inserted one space at a time.

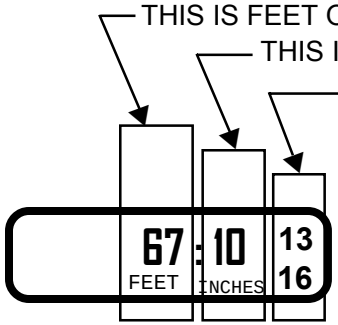
To recall or to check what default spacing dimension is stored in the calculator press INV SPAC.

NUMBERED KEY DEFINITIONS

KEYS	USED AS FEET OR WHOLE NUMBER IN ANY MODE	INCHES	FRACTION OR SIXTEENTH
0	0	0	0
1	1	1"	1/16
2	2	2"	2/16 or 1/8
3	3	3"	3/16
4	4	4"	4/16 or 1/4
5	5	5"	5/16
6	6	6"	6/16 or 3/8
7	7	7"	7/16
8	8	8"	8/16 or 1/2
9	9	9"	9/16
10		10"	10/16 or 5/8
11		11"	11/16
12		*	12/16 or 3/4
13		*	13/16
14		*	14/16 or 7/8
15		*	15/16

In the INCH MODE only these keys can be used for inches.

SEE PAGE 62 FOR ADDITIONAL HELP.



The same key can have different values depending on where it is positioned in the display.

IN THE FIS MODE

How to enter 67' - 10 13/16" in the Calculator.

REMARKS	KEYS TO PRESS	DISPLAY READS
	ON	Ft. Inch 16th
Turn on Calc.	FIS	0 – 0 – 0
	3/8 7/16 5/8 13/16	
Enter 67' - 10 13/16"	6 7 10 13	67 – 10 – 13/16

Once it is in the calculator's display, it can be used as desired. (Add - Sub. - Mult. - Divide - Etc.)

INSTANT DIMENSIONAL UNIT CONVERSION

Convert 7' - 10 3/8" to other units.

REMARKS	KEYSTROKES	DISPLAY READS
Enter FIS Dim.	FIS 7 10 6	7 – 10 3/8
Conv. to Inches	INCH	94 3/8
Conv. to Dec. Inches	INCH	94.375
Conv. to Dec. Feet	DEC	7.864583
Conv. to Millimeters	MM	2397.125
Conv. to Meters	INV MM	2.397125

EXAMPLES OF HOW TO ENTER DIMENSIONS IN THE [FIS] (FT., INCH, SIXTEENTH MODE.)

REMARKS	KEYS TO PRESS	DISPLAY READS
		$^{5}/_{8}$
Enter 10' - $10^{5}/_{8}$"	[1] [0] [10] [10]	10 – 10 – $^{10}/_{16}$
		$^{3}/_{4}$
Enter 9' - $11^{3}/_{4}$"	[9] [11] [12]	9 – 11 – $^{12}/_{16}$
		$^{3}/_{8}$
Enter $8^{3}/_{8}$"	[8] [6]	0 – 8 – $^{6}/_{16}$
		$^{15}/_{16}$
Enter $^{15}/_{16}$"	[15]	0 – 0 – $^{15}/_{16}$
Enter 9' - 0"	[9] [0] [0]	9 – 0 – $^{0}/_{16}$
Enter 10"	[10] [0]	0 – 10 – $^{0}/_{16}$
Enter 2' - 8"	[2] [8] [0]	2 – 8 – $^{0}/_{16}$
Enter 22' - $4^{3}/_{4}$"	[2] [2] [4] [12]	22 – 4 – $^{12}/_{16}$

Always press the numbers just as you would say them.

Twenty [2] two [2] feet four [4] $^{3}/_{4}$ inches and three quarters [12]

NOTE: You must press the two additional **"0"'s** to move the 9' over to the whole number position.

NOTE: You must press one additional **"0"** to move the 10" or 8" over to the inch position.

When a fraction is first put in the calculator it will always read in the 16th. But as soon as any action key is pressed it will be changed to its lowest common denominator.

However, the display can be set to have the fractions remain in 16th by pressing the [FIS] key two times.

ENTER DIMENSIONS JUST AS YOU WOULD SAY THEM

REMARKS	KEYS TO PRESS	DISPLAY READS
		Ft. Inch 16th
Enter 3' - 8"	[3] [8] [0]	3 – 8 – 0
Three feet [3] eight inches [8] zero sixteenth [0]		
Enter 12' - $1^{3}/_{4}$"	[1] [2] [1] [12]	12 – 1 – $^{12}/_{16}$
Twelve feet [1] [2] one inch [1] and three quarters [12]		

Note: The [12] key could not be used here as this is a whole number of feet.

Note: The key [12] is only used for $^{12}/_{16}$" or $^{3}/_{4}$" – no other function. (*Except in the inch mode it can be used for 12".)

TOTAL THESE DIMENSIONS

REMARKS	KEYS TO PRESS	DISPLAY READS
Add 3' - $10^{1}/_{4}$"	[3] [10] [4] [+]	3 – 10 – $^{1}/_{4}$
Add 7' - $6^{1}/_{2}$"	[7] [6] [8] [+]	11 – 4 – $^{3}/_{4}$
Add 24' - $11^{1}/_{8}$"	[2] [4] [11] [2] [=]	36 – 3 – $^{7}/_{8}$
Subtract 8' - $3^{1}/_{2}$"	[–] [8] [3] [8] [=]	28 – 0 – $^{3}/_{8}$
Multiply by 4 - spaces	[x] [4] [0] [0] [=]	112 – 1 – $^{1}/_{2}$
Divide by 7 - spaces	[÷] [7] [0] [0] [=]	16 – 0 – $^{3}/_{16}$
	SHIFT DMS	
Ask for remainder	[INV] [÷]	0 – 0 – $^{3}/_{16}$

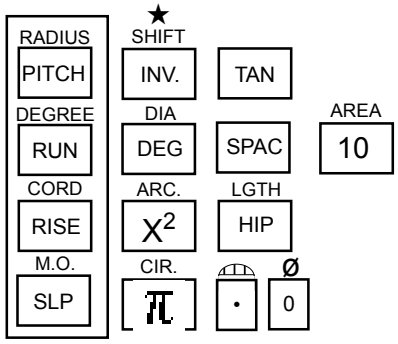
To multiply or divide a number by a certain number of spaces and get a **remainder**, the **multiplier** or **divisor** must be a **whole** number.

[+/-] This key changes the sign of the displayed number.

Let's say you have a dimension like 23' - $7^{3}/_{4}$" in the display and you want to subtract it from a higher number, like 36' - $7^{1}/_{2}$".

	KEYS TO PRESS	DISPLAY READS
		DISPLAY READS
Display reads		23 – 7 – $^{3}/_{4}$
Change it to a minus	[+/-]	– 23 – 7 – $^{3}/_{4}$
Subtract from 36'-$7^{1}/_{2}$"	[+] [3] [6] [7] [8]	36 – 7 – $^{8}/_{16}$
	[=]	12 – 11 – $^{3}/_{4}$

Be sure to press the [+] first before entering the dimension.



KEYBOARD

These are the keys for automatically solving right triangles and segments of a circle.

NOTE: The Calculator is automatically in the triangle mode when it is turned on.

To enter the Circle Mode

Press ★SHIFT INV and Ø 0

Then a small circle icon [ø] will appear in the left top corner of the display indicating you are in the Circle Mode.

To exit the Circle Mode repeat the process

Press ★SHIFT INV and Ø 0 and the small circle in the display will go out OR turn the calculator off.

Please note this **special feature for these keys**. They have a **memory of their own** and can be recalled at any time even after the calculator is turned off.

They can be recalled by pressing the INV key and the key for the part of the triangle or circle you wish to recall.

Note This: In the triangle mode it is very important that you **never go directly** back to the PITCH key without pressing INV PITCH. This allows you to recall the pitch without it being altered by any value that may be in the display.

RIGHT TRIANGLE

DIA
DEG
AREA
INV 10

SEGMENTS OF CIRCLE

METRIC INFO

METER
MM This key activates the **Metric Mode** and converts any other displayed dimension to the equivalent in **Millimeters**. When this mode is activated, the small icon **MET.MM** will appear in lower left corner of the display.

METER
INV MM Will shift the metric mode to working in **meters** and the small **MET.MM** icon will **flash on and off** to indicate the calculator is working in meters.

The metric mode of **JOBBER 6** works in millimeters and meters, but these can very easily be converted to centimeters, by moving the decimal place.

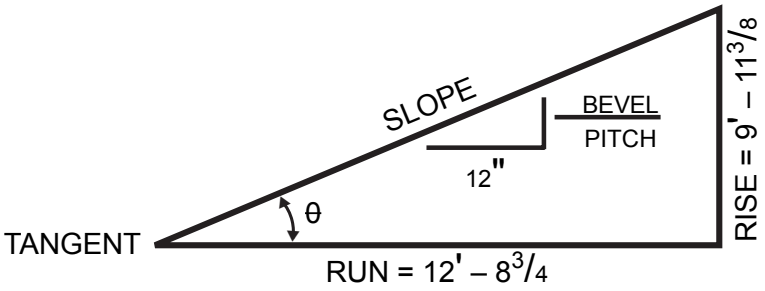
One Meter = 1000 millimeters
One Centimeter = 10 millimeters

So, if your dim is in meters, simply multiply by 1000 or move the decimal point **3** places to the right for millimeters.

If your dim is in centimeters, simply multiply by 10, or move the decimal **1** place to the right for millimeters or 2 places to left for meters.

EXAMPLE:

MILLIMETERS		METERS		CENTIMETERS
1000	=	1	=	100
3122	=	3.122	=	312.2
41	=	.041	=	4.1
250	=	.250	=	25

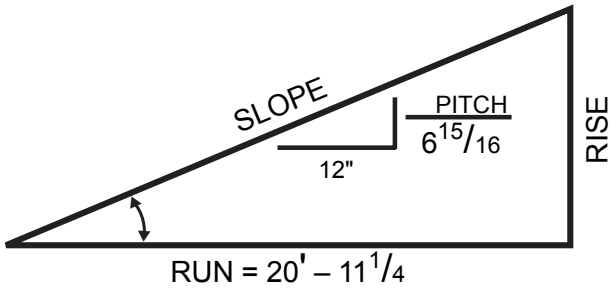


Given...Rise – 9' – $11^{3}/_{8}$"
Run – 12' – $8^{3}/_{4}$"
Find.....Slope
Pitch
Tangent
Convert Tangent to Degree:

REMARKS	PRESS	DISPLAY
Turn on Jobber	FIS	0 – 0 – 0
Enter Run	1 2 8 12	12 – 8 – $^{12}/_{16}$
Tell Calc. this is Run	RUN	12 – 8 – $^{3}/_{4}$
Enter Rise	9 11 6	9 – 11 – $^{6}/_{16}$
Tell Calc. this is Rise	RIS	9 – 11 – $^{3}/_{8}$
Ask for Slope	SLP	16 – 1 – $^{7}/_{8}$
Ask for Pitch	PITCH	0 – 9 – $^{3}/_{8}$
Convert Pitch to Dec. for Tangent	DEC	.781505
Convert Tan. to Degree	DEG	38.00783

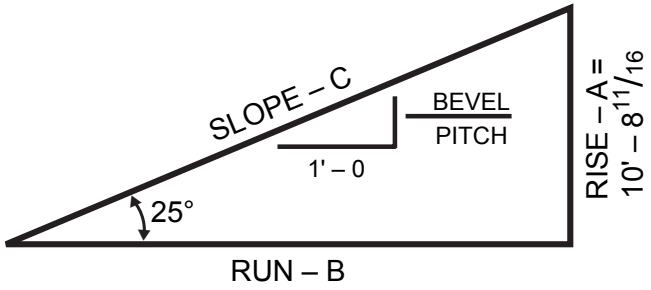
ANSWERS:

Slope = 16' – $1^{7}/_{8}$
Pitch = $9^{3}/_{8}$ to 12"
Tangent = .7815056
Degree for Tangent = 38.00783



Given...Pitch = $6^{15}/_{16}$' and Run = 20' – $11^{1}/_{4}$"
Find.....Rise and Slope
Note....When the Pitch and one side is known, the other sides can be calculated with ease.

REMARKS	PRESS	DISPLAY
Turn on Jobber	FIS	0 – 0 – 0
Enter given Pitch of $6^{15}/_{16}$	0 6 15	0 – 6 – $^{15}/_{16}$
Tell Calc. this is Pitch	PITCH	0 – 6 – $^{15}/_{16}$
Enter given Run of 20' $11^{1}/_{4}$"	2 0 11 4	20 – 11 – $^{4}/_{16}$
Tell Calc. this is Run	RUN	20 – 11 – $^{1}/_{4}$
Ask for length of Rise	RIS	12 – 1 – $^{1}/_{4}$
Ask for length of Slope	SLP	24 – 2 – $^{3}/_{16}$
Ask for Degree	DEG	30.03328
	AREA	
Ask for Area	INV 10	126.7189



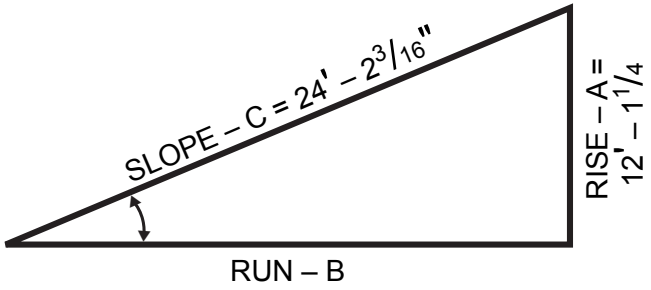
Given...Rise – "A" = $10' - 8\frac{11}{16}"$ and Angle = 25 degrees
Find.....Pitch, Run and Slope

Note....When the angle, and one of the three sides of a right triangle are known, the length of each of the other two sides, and the pitch, can easily be calculated as follows:

REMARKS	PRESS	DISPLAY
Turn on Jobber	FIS	0 – 0 – 0
Put Jobber into Dec. mode	DEC	0
Enter given Degree	2 5	25
Tell Calc. this is Degree	DEG	25
Enter given Rise of $10' - 8\frac{11}{16}"$	1 0 8 11	$10 - 8 - \frac{11}{16}$
Tell Calc. this is Rise	RIS	$10 - 8 - \frac{11}{16}$
Ask for length of Run	RUN	23 – 0 – 0
Ask for length of Slope	SLP	$25 - 4 - \frac{1}{2}$
Ask for Pitch	PITCH	$0 - 5 - \frac{5}{8}$

ANSWERS:

Pitch = $5\frac{5}{8}$ to 12"
Run = $23' - 0$
Slope = $25' - 4\frac{1}{2}"$



USING SQUARES TO SOLVE TRIANGLE

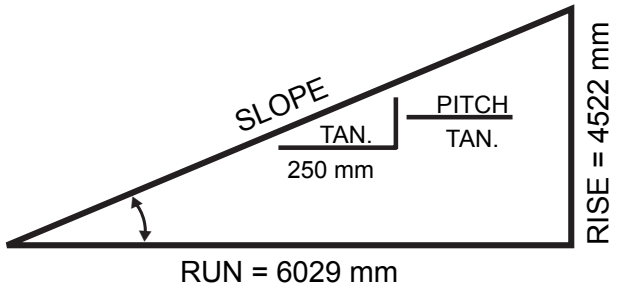
(Basic Formula: $A^2 + B^2 = C^2$)
Given...Rise – "A" = $12' - 1\frac{1}{4}"$ and Slope = $24' - 2\frac{3}{16}"$
Find.....Run "B"

Note....$Run^2 = Slope^2 - Rise^2$

REMARKS	PRESS	DISPLAY
Turn on Jobber	FIS	0 – 0 – 0
Enter given Slope of $24' - 2\frac{3}{16}"$	2 4 2 3	$24 - 2 - \frac{3}{16}$
Square Slope	X^2	584.7832
Subtract	−	584.7832
Convert back to FIS mode	FIS	$584 - 9 - \frac{3}{8}$
Enter given Rise of $12' - 1\frac{1}{4}"$	1 2 1 4	$12 - 1 - \frac{4}{16}$
Square Rise	X^2	146.5109
Equal	=	438.2724
Invert	INV	438.2724
Square (Find Sq. Root)	X^2	20.93496
Convert Answer back to FIS	FIS	$20 - 11 - \frac{1}{4}$

ANSWERS: Run = $20' - 11\frac{1}{4}"$

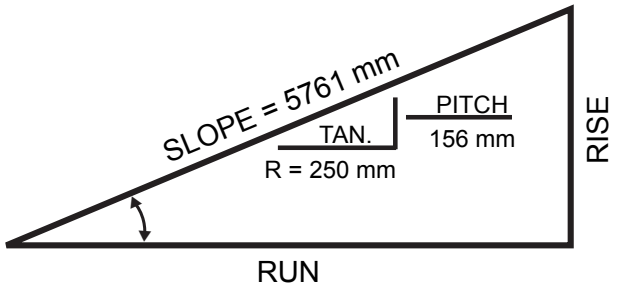
NOTE: It is easier to use Rise-Run-Slope keys if it is a right triangle.



Given...Run = 6029 mm and Rise = 4522
Find.....Tangent (in Metric Tangent is Pitch)
(Find Rise based on a Run of 250 mm)
Find.....Slope
Also Convert Metric Tangent to FIS Pitch

REMARKS	PRESS	DISPLAY
Turn on Jobber	FIS	0 – 0 – 0
Switch to Metric Mode	MET	0
Enter Given Run	6 0 2 9	6029
Tell Calc. this is Run	RUN	6029
Enter Given Rise	4 5 2 2	4522
Tell Calc. this is Rise	RIS	4522
Ask for Slope	SLP	7536.4
Ask for Tangent	PITCH	.750041
Ask for Rise based on 250 mm Run	2 5 0 RUN	250
Ask for Rise	RIS	187.5104
If desired, now convert Metric Tangent to FIS (Pitch)		
Go back to FIS mode	FIS	0 – 7 – 3/8
Press	INV PITCH	0 – 9 – 0

ANSWER: Pitch in FIS = 9" to 12"



Given...A Pitch of **156 mm, Rise** to **250 mm Run**
Given...Slope dim of 5761 mm
Find.....Run
Find.....Rise
Convert Metric Bevel to FIS

REMARKS	PRESS	DISPLAY
Turn on Jobber	FIS	0 – 0 – 0
Switch to Metric Mode	MET	0
Enter 250 mm	2 5 0	250
Tell Calc. this is Run	RUN	250
Enter 156 mm	1 5 6	156
Tell Calc. this is Rise	RIS	156
Ask for Tangent	PITCH	0.624
Now enter Slope	5 7 6 1	5761
Tell Calc. this is Slope	SLP	5761
Ask for Run	RUN	4887.514
Ask for Rise	RIS	3049.808
To convert Metric Pitch to FIS Pitch, go back to FIS mode	FIS	10 – 0 – 1/16
Tell Calc. to recall the Pitch	INV PITCH	0 – 7 – 1/2

ANSWER: Pitch in FIS = 7 1/2" to 12"

HOW TO ENTER OR CONVERT TO DEGREES – MINUTES – SECONDS

To enter a DEG. – MIN – SEC Press: [INV] – [DMS MEM]

To convert a decimal degree that is shown in display to DEG. – MIN – SEC Press: [INV] – [DMS RCL]

Example of How to Enter a D.M.S. Press [SHIFT INV] – [DMS MEM]

Enter 37° 22' 25" into calculator Press: [3] [7] [•] [2] [2] [•] [2] [5]

		Display Reads
Now Convert to Decimal Degree	[DEC]	37.37361
Now Ask for Tangent	[TAN]	0.763828

The tangent can be put in [PITCH] for solving triangles.

NOTE: In the Circle Mode, DMS can be put directly into the degree key [DEG RUN] without converting to decimal equivalent.

Decimal Equivalent of DMS can be converted by pressing [INV] [DMS RCL]

Example: Convert 41.2876° to D.M.S. that is in the display.

Press: [INV] [DMS RCL] **41.17.15** or 41° 17' 15"

How to convert a Pitch of $6^3/_4$" to D.M.S.

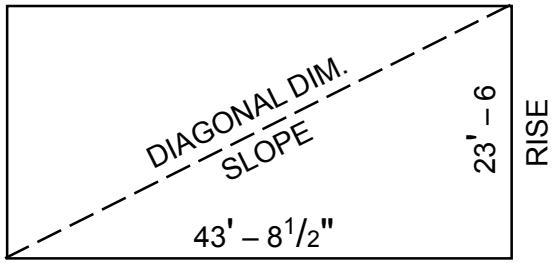
Remarks		
Convert to Dec. Deg.	[DIA DEG]	29.35775
Now convert to D.M.S.	[INV] [DMS RCL]	29.21.28 or **29° 21' 28"**

SQUARING UP A BUILDING OR ANY PROJECT

You want to square up a building for which you know the Dims. of two sides. What should the Diagonal Dim. be?

REMARKS	PRESS	DISPLAY
Turn on Jobber	[FIS]	0 – 0 – 0
Enter Run Dim.	[4] [3] [8] [8]	43 – 8 – $^8/_{16}$
Tell Calc. this is Run	[RUN]	43 – 8 – $^1/_2$
Enter Rise Dim.	[2] [3] [6] [0]	23 – 6 – 0
Tell Calc. this is Rise	[RIS]	23 – 6 – 0
Ask for Slope Dim	[SLP]	49 – 7 – $^1/_2$

So the Diagonal Dim. is 49' – $7^1/_2$"



ESTIMATING BRICK

How many standard bricks are required for a wall 42'-8" long x 9'-0" high.

Brick Size (3-$^{3}/_{4}$" x 8")

REMARKS	KEYSTROKES	DISPLAY READS
Find area of brick	3 12 x 8 0 =	0.208333
Store in MEM	MEM	0.208333
Find sq. ft. in the wall (go back to FIS)	FIS 4 2 8 0 x 9 0 0 =	384 – $0^{0}/_{16}$
Divide by brick area	÷ RCL =	1843.2 (bricks)
Add 5% for waste	x 1 • 0 5 =	1935.36 (bricks)

CALCULATING BOARD / FEET FOR LUMBER

Board Feet / Lumber calculations can easily be performed with the **JOBBER "6."**

Example:

Calculate the board feet in a (2 x 4) x 14' long
Go to DEC mode, multiply 2 (x) 4 (x) 14 (=) 112

Ask for Board Feet press INV (BD. FT.) +/– (9.3333 board ft.)

Example:

Calculate the board ft. in 7 (2 x 12) x 18' long.
2 x 12 (x) 18 (x) 7 = 3024

Convert to Board Feet press INV (BD. FT.) +/– (252 board ft.)

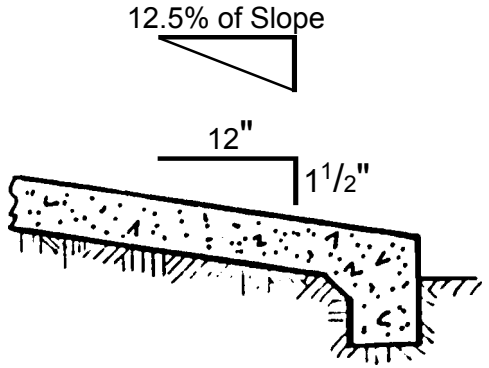
PERCENT OF SLOPE

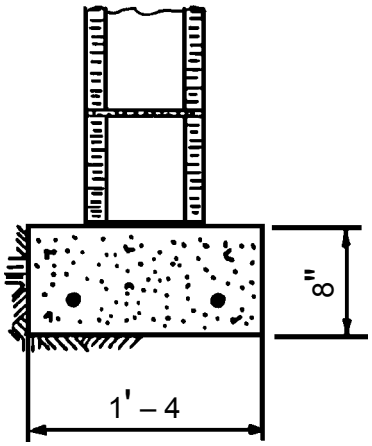
Convert 12.5% of Slope to Pitch.
We have a ramp sloping at 12.5% - what is the pitch per foot?

REMARKS	PRESS	DISPLAY
Turn on Jobber	FIS	0 – 0 – 0
Go to Dec. Mode	DEC	0
Enter 12.5%	• 1 2 5	.125
Convert to FIS Mode	FIS	0 – $1^{1}/_{2}$

12.5% Slope = $1^{1}/_{2}$" to 12" (Slope Pitch)

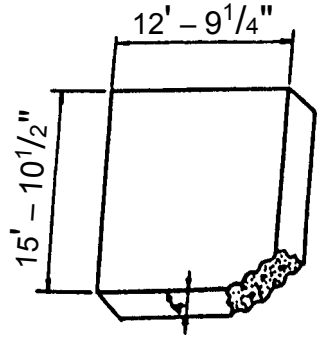
To convert $1^{1}/_{2}$" Pitch back to percent (%) of Slope, simply press DEC key.





You have 160 Lin. Ft. of concrete footing.
How many cubic yards of concrete is needed?

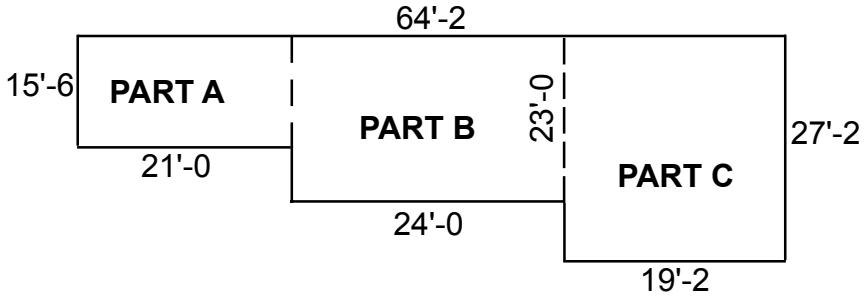
REMARKS	PRESS	DISPLAY
Turn on Jobber	FIS	0 – 0 – 0
Enter 8"	8 0	0 – 8 – 0
Multiply by 1' – 4	X 1 4 0	1 – 4 – 0
Equals	=	0.888889
Multiply by 160'	X 1 6 0 =	142.2222 (cubic feet)
Conv. to Cubic Yards	INV CU. YD. 15	5.26749 (cubic yards)



NOTE: There are 27 Cubic Feet of concrete in one cubic yard. How many cubic yards of concrete are required to pour this slab.

REMARKS	PRESS	DISPLAY
Turn on Jobber	FIS	0 – 0 – 0
Enter 15' – 10 1/2"	1 5 10 8	15 – 10 – 8/16
Multiply by 12' – 9 1/4"	X 1 2 9 4	12 – 9 – 4/16
Equals	=	202.737
Multiply	X	202.737
Convert to FIS	FIS	202 – 8 – 7/8
Enter 4" thick slab	4 0	0 – 4 - 0
Equals Cubic Feet	=	67.57899
Conv. to Cubic Yards	INV CU. YD. 15	2.502958
Cubic Yards of concrete		2.502926

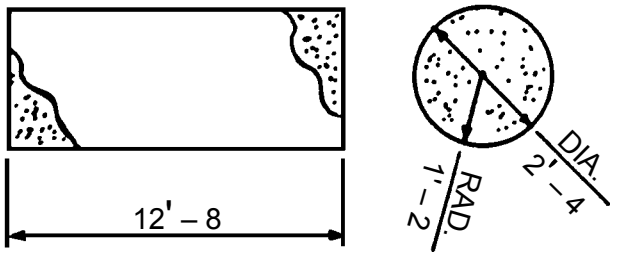
CALCULATING CONCRETE VOLUME



You are pouring this odd shaped slab 5" deep. How many yards of concrete are required?

Find area for each part and store in (MEM +) M3.

REMARKS	KEYSTROKES	DISPLAY READS
Find area **Part A**	1 5 6 0 x 2 1 0 0 =	325 – $6^0/_{16}$
Store in (M + M3)	INV MEM+ MEM 3 M3	325 – $6^0/_{16}$
Find area **Part B**	2 3 0 0 x 2 4 0 0 =	552 – $0^0/_{16}$
Store in (M + M3)	INV MEM+ MEM 3 M3	552 – $0^0/_{16}$
Find area **Part C**	2 7 2 0 x 1 9 2 0 =	520.6944
Store in (M + M3)	INV MEM+ MEM 3 M3	520.6944
Recall total Sq. Ft.	MEM- RCL 3 M3	1398.194
Multiply by 5" Deep	x FIS 5 0 =	582.581 (cubic ft.)
Convert to Cubic Yards	INV 15 CU. YD.	21.57707 (cubic yards)



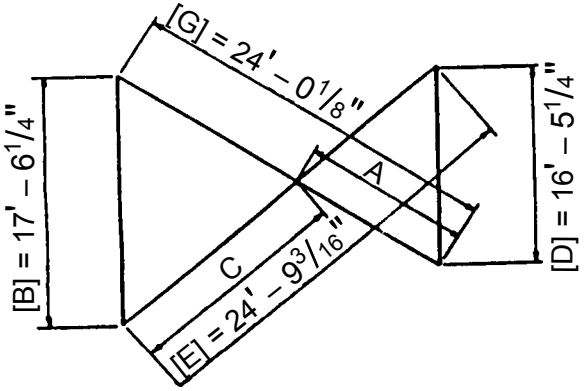
Find the Cubic Yard of Concrete in this Cylinder.

To Find Volume of Cylinder. Area = R^2 x π

FORMULA: Volume = Radius^2 x π x Height

REMARKS	PRESS	DISPLAY
Turn on Jobber	FIS	0 – 0 – 0
Go to Circle Mode	INV Ø 0	0 – 0 – 0
Put in Dia.	2 4 0 DIA DEG	2 – 4 – 0
Ask for Area	INV AREA 10	4.276057
Go to FIS Mode	FIS	4' - $3^5/_{16}$
Multiply by Length	X 1 2 8 0 =	54.16319 (cubic feet)
Conv. to Cubic Yards	INV CU. YD. 15	2.006044 (cubic yards)

OFF-SET BRACING



Line B and D must be Parallel)

FORMULA "A" (FIND C DIM)

$$C = \frac{(B)\ 17' - 6\frac{1}{4}"}{17' - 6\frac{1}{4}" + 16' - 5\frac{1}{4}"} \times 24' - 9\frac{3}{16}"$$
$$(B) \qquad (D) \qquad (E)$$

ANSWER: C = 12' – $9\frac{5}{16}$"

FORMULA "B" (FIND A DIM)

$$A = \frac{(D)\ 16' - 5\frac{1}{4}"}{16' - 5\frac{1}{4}" + 17' - 6\frac{1}{4}"} \times 24' - 0\frac{1}{8}"$$
$$(D) \qquad (B) \qquad (G)$$

ANSWER: A = 11' – $7\frac{7}{16}$"

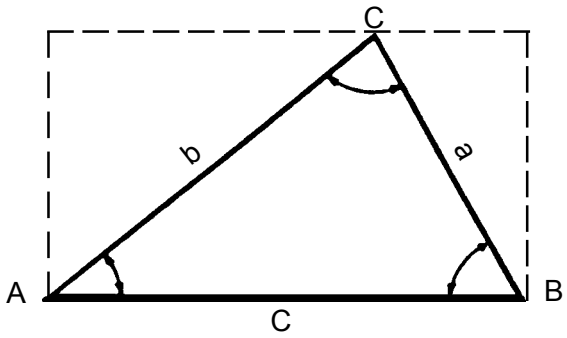
SEE FORMULAS "A" and "B"
on following page

FORMULA "A"

REMARKS	PRESS	DISPLAY
ADD (B + D)	1 7 6 4 + 1 6 5 4 =	33 – 11 – $\frac{1}{2}$
Store in Mem. "#1"	MEM 1	33 – 11 – $\frac{1}{2}$
Enter (B)	1 7 6 4	17 – 6 – $\frac{4}{16}$
Divide	÷	17 – 6 – $\frac{1}{4}$
Recall Mem. "#1"	RCL 1	33 – 11 – $\frac{1}{2}$
Equals	=	.515951
Multiply	X	.515951
Back to FIS Mode	FIS	0 – 6 – $\frac{3}{16}$
Enter "E"	2 4 9 3	24 – 9 – $\frac{3}{16}$
Equals	=	12.77785
Back to FIS Mode for Dim. "C"	FIS	24 – 9 – $\frac{5}{16}$

FORMULA "B"

REMARKS	PRESS	DISPLAY
Enter (D)	1 6 5 4	16 – 5 – $\frac{4}{16}$
Divide	÷	16 – 5 – $\frac{1}{4}$
Recall Mem. "#1"	RCL 1	33 – 11 – $\frac{1}{2}$
Equals	=	.484049
Multiply	X	.484049
Back to FIS Mode	FIS	0 – 5 – $\frac{13}{16}$
Enter "G"	2 4 0 2	24 – 0 – $\frac{2}{16}$
Equals	=	11.62222
Back to FIS Mode for Dim. "A"	FIS	11 – 7 – $\frac{7}{16}$



OBLIQUE TRIANGLES

1. Oblique triangles can be solved if you know 2 angles and one side, or
2. If you know 2 sides and one angle.

FORMULA: a/SIN A = b/SIN B = c/SIN C

The keystroke procedures presented here are not unique. There are many possible solutions to each problem. Until you become comfortable with a particular formula you may find it valuable to draw a diagram and label your results. Once you have become familiar with the formula and the **JOBBER 6** you will no doubt develop your own keystroke procedure that works well for you.

OBLIQUE TRIANGLES

Example #1
Formula: (a ÷ SIN of A) x (SIN of B) = b
Known: Angle "A" = 44°, Angle "B" = 65° Side "a" = 12' - $7^{1}/_{2}$

Find Side (b)

REMARKS	PRESS	DISPLAY
Turn on JOBBER	FIS	0 – 0 – 0
Go to Dec Mode	DEC	0.
Enter Angle "A" (44°)	4 4 SIN	44.
Ask for Sine	INV 6	.694658
Store in Mem. #1	MEM 1	.694658
Convert to FIS Mode	FIS	0 – 8 – $^{5}/_{16}$
Enter Side "a"	1 2 7 8	12 – 7 – $^{8}/_{16}$
Divide by RCL Mem. #1	÷ RCL 1 =	18.1744
Store in Mem. #2	MEM 2	18.1744
Enter Sin. of Angle "B"	6 5 INV SIN 6	.906308
Mult. by RCL Mem. #2	X RCL 2 =	16.4716
Convert to FIS Mode	FIS	16 – 5 – $^{11}/_{16}$

ANSWER: Side "b" = 16' – $5^{11}/_{16}$

OBLIQUE TRIANGLES Example#2

Formula: Sine of "B" = (a ÷ SINE A) ÷ b
Given: Side "a" = 12' - $7^{1}/_{2}$ Find: Degree "B"
Side "b" = 16' - $5^{11}/_{16}$ Angle "A" = 44

REMARKS	PRESS	DISPLAY
Turn on JOBBER	FIS	0 – 0 – 0
Go to Dec Mode	DEC	0.
Enter Angle "A"	4 4 SIN	44.
Ask for Sine	INV 6	.694658
Store in Mem. #1	MEM 1	.694658
Convert to FIS Mode	FIS	0 – 8 – $^{5}/_{16}$
Enter Side "a"	1 2 7 8	12 – 7 – $^{8}/_{16}$
Divide by RCL Mem. #1	÷ RCL 1 =	18.1744
Store in Mem. #2	MEM 2	18.1744
Go back to FIS Mode	FIS	18 – 2 – $^{1}/_{16}$
Enter Side "b"	1 6 5 11	16 – 5 – $^{11}/_{16}$
Divide by RCL Mem. #2	÷ RCL 2 =	.906437
Invert Sine	INV INV SIN 7	65.01759

ANSWER: Side "B" = 65 Degrees

NOTE: If during the solving process you make a mistake or want to start over, press the [CLR] key, then reactivate the rise function by pressing the [INV] [RK-UP 13] keys to start the solving process over again, or to review the answers activate the TAPE function by pressing [INV] [TAPE =] keys then the [–] key, to review the answers in reverse. This same process works for JACK, RAKE-UP and RAKE-DOWN and SEGMENTED RISE functions.

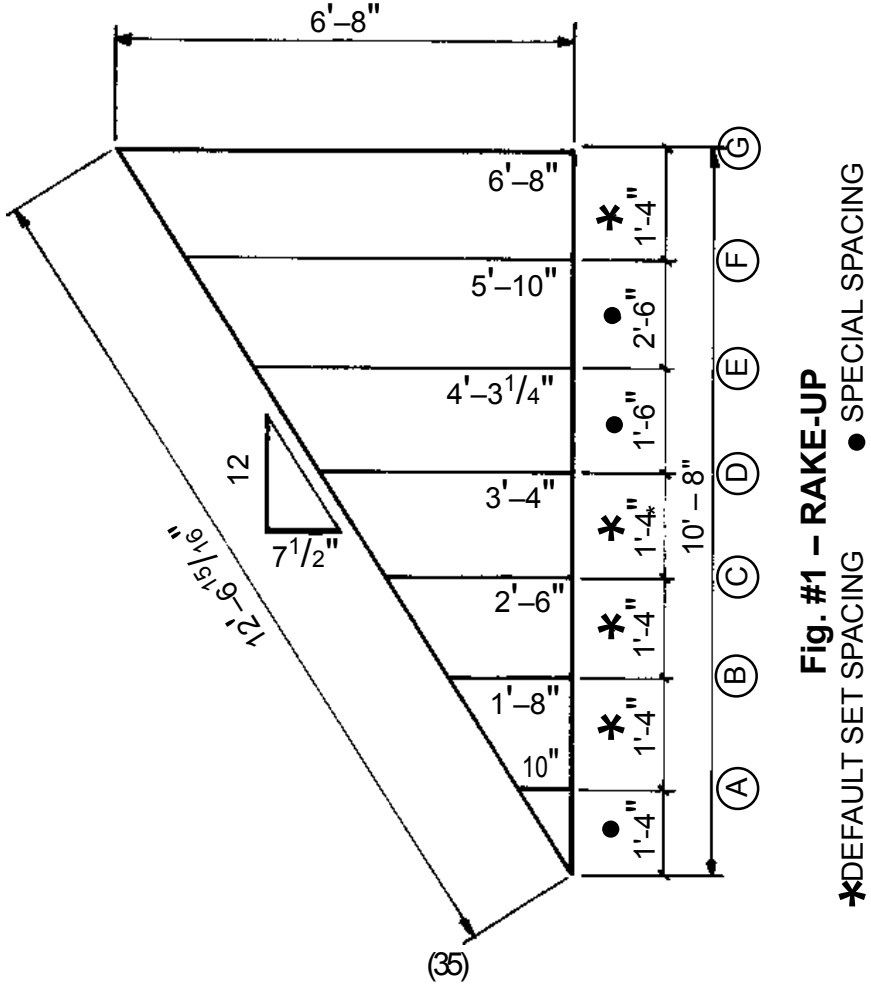


Fig. #1 – RAKE-UP

● SPECIAL SPACING

✱DEFAULT SET SPACING

RAKE-UP KEY FUNCTION

This function will solve the increasing length for studs in a raked wall (or give the rise dimensions in any right triangle situation) using the stored values in the triangle keys, **RISE**, **RUN**, **SLOPE**, **PITCH**, plus the [SPAC] key.

The [SPAC] key is used for setting the **DEFAULT** spacing. But a **SPECIAL** spacing can be substituted at any time.

Once all the values are in place press the [+] key to solve for each rise dimension.

Figure #1

First put values in the triangle function keys if they are not already there.

REMARKS	KEYS TO PRESS	DISPLAY READS
Enter the PITCH	[7] [8] [PITCH]	7 – 8/16
Enter the RUN	[1] [0] [8] [0] [RUN]	10 – 8 – 0
Enter Default Spacing	[1] [4] [0] [SPAC]	1 – 4 – 0
Activate Rake-Up Function	[INV] [RK-UP 13]	0 – 0 – 0
Ask for DIM. Ⓐ	[+]	0 – 10 – 0
Ask for DIM. Ⓑ	[+]	1 – 8 – 0
Ask for DIM. Ⓒ	[+]	2 – 6 – 0
Ask for DIM. Ⓓ	[+]	3 – 4 – 0
Enter Special Space	[1] [6] [0] [SPAC]	1 – 6 – 0
Ask for DIM. Ⓔ	[+]	4 – 3 – 1/4
Enter Special Space	[2] [6] [0] [SPAC]	2 – 6 – 0
Ask for DIM. Ⓕ	[+]	5 – 10 – 0
Ask for DIM. Ⓖ	[+]	6 – 8 – 0

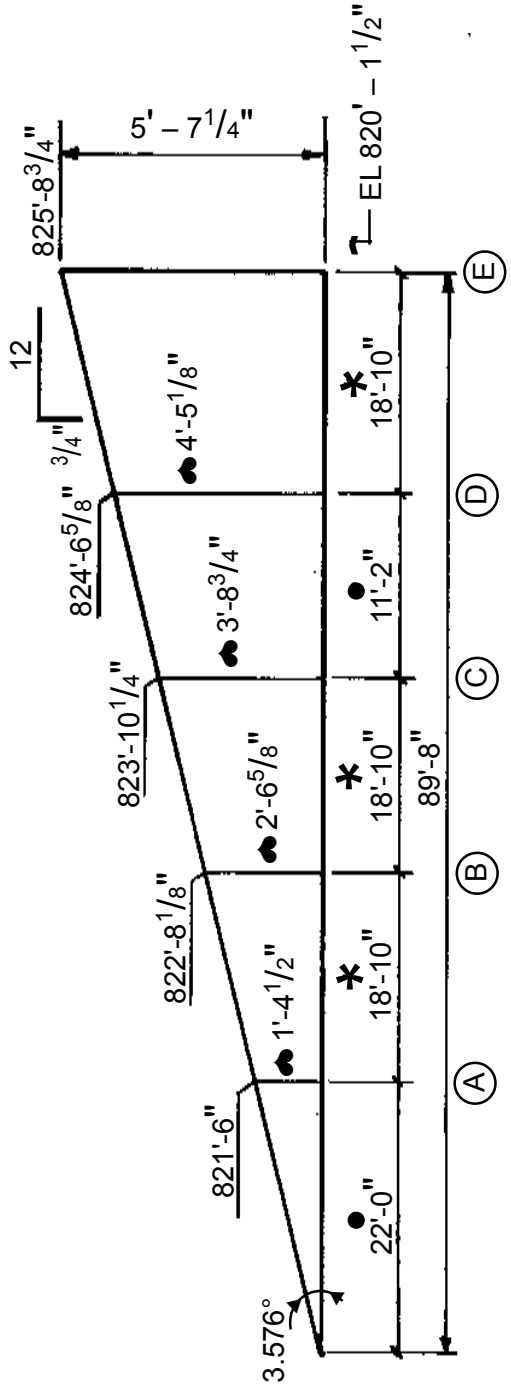


Fig. #2 – CALCULATING GRADES OR ROOF SLOPE ELEVATIONS

✱ DEFAULT SET SPACING ● SPECIAL SPACING

This function can be used to calculate dimensions for sloping grades or sloping roofs. It is excellent for finding elevations at column lines or various other points for sloping structures.

Figure #2

REMARKS	KEYS TO PRESS	DISPLAY READS
Enter RUN	8 9 8 0 RUN	89 – 8 – 0
Enter RISE	5 7 4 RISE	5 – 7 – 4/16
Enter Default Spacing	1 8 10 0 SPAC	18 – 10 – 0
Activate Rake-Up Function	INV 13 (RK-UP)	0 – 0 – 0
Enter Special Spacing	2 2 0 0 SPAC	22 – 0 – 0
Ask for DIM. Ⓐ	+	1 – 4 – 1/2
Ask for DIM. Ⓑ	+	2 – 6 – 5/8
Ask for DIM. Ⓒ	+	3 – 8 – 3/4
Enter Special Spacing	1 1 2 0	11 – 2 – 0
Ask for DIM. Ⓓ	+	4 – 5 – 1/8
Ask for DIM. Ⓔ	+	5 – 7 – 1/4

NOTE: If you are working with an exact **PITCH** or **DEGREE** or **TANGENT**, put it in the calculator and the **RUN** or **RISE** can be set for any long distance like 100 feet. Then rise calculations can be made at various points along the base using the **PITCH**, **DEGREE** or **TANGENT** and the space key.

NOTE: To recall or check the stored dimension that is in the default spacing press INV SPAC.

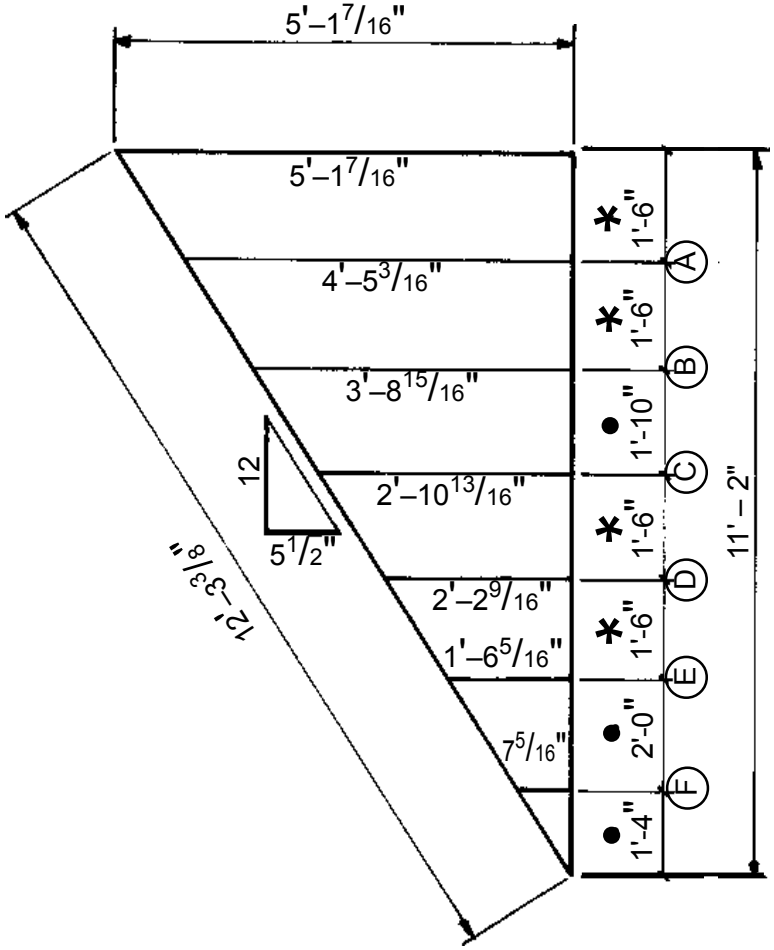


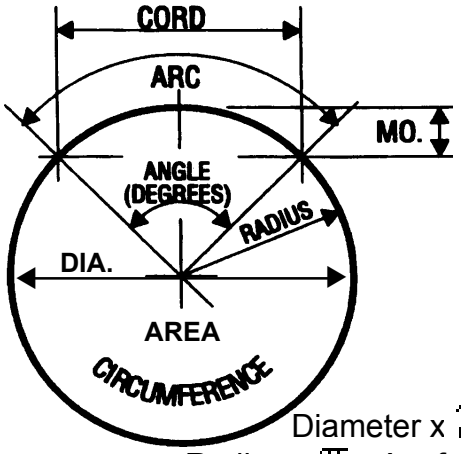
Fig. #3 – RAKE-DOWN

RAKE-DOWN KEY FUNCTION

The **RAKE-DOWN** mode works very similar to the **RAKE-UP** mode with the exception it starts with the high side of the triangle and works down. It is excellent for finding the decreasing stud lengths in a raked wall.

Figure #3

REMARKS	KEYS TO PRESS	DISPLAY READS
Enter TRIANGLE RUN	[1] [1] [2] [0] [RUN]	11 – 2 – 0
Enter ROOF PITCH	[5] [8] [PITCH]	$5^{8}/_{16}$
Set Default Spacing	[1] [6] [0] [SPAC]	1 – 6 – 0
Activate Rake-Down Function	[INV] [RK-DN 14]	5 – 1 – $^{7}/_{16}$
Ask for DIM. Ⓐ	[+]	4 – 5 – $^{13}/_{16}$
Ask for DIM. Ⓑ	[+]	3 – 8 – $^{15}/_{16}$
Enter Special Space	[1] [10] [0] [SPAC]	1 – 10 – 0
Ask for DIM. Ⓒ	[+]	2 – 10 – $^{13}/_{16}$
Ask for DIM. Ⓓ	[+]	2 – 2 – $^{9}/_{16}$
Ask for DIM. Ⓔ	[+]	1 – 6 – $^{5}/_{16}$
Enter Special Spacing	[2] [0] [0] [SPAC]	2 – 0 – 0
Ask for DIM. Ⓕ	[+]	7 – $^{5}/_{16}$



Solve circles instantly in the Circle Mode!

Circle Solution Data

Radius^2 x π = Area of Circle
Diameter x π = Circumference for (360°)
Radius x π = Arc for $^1/_2$ circumference or (180°)
Circumference divided by 360° = (Arc for one degree)
$^1/_2$ of circumference divided by 180 = (Arc for one degree)
Angle degree multiplied by **arc** for **one degree** equals (arc for said degree)

To activate the Circle Mode press — * SHIFT [INV] ø [0]

A small circle **Ø** will appear in the upper right corner of the display indicating that the calculator is in the circular mode.

To exit the Circle Mode, press or turn the calculator off. — * SHIFT [INV] ø [0]

If you know these two parts of the circle, the calculator will tell you the rest.

- Cord and M.O. (Middle Ordinate)
- Cord and Degree
- Cord and Radius or Diameter
- Radius and Degree
- Radius and Middle Ordinate
- Radius and Arc
- Middle Ordinate and Degree
- Circumference - One keystroke gives you the radius.
- Radius – One keystroke gives you the circumference.

Segment of Circle Example #1

Given Cord = 10' – $5^1/_2$"
Given M O = 1' – 2"
Find Radius ? _____
Find Degree ? _____
Find Area in Circle ? _____

REMARKS	PRESS	DISPLAY
Enter Circle Mode	* INV ø 0	0 – 0 – 0
Enter Cord	1 0 5 8	10 – 5 – $^8/_{16}$
Tell Calc. this is Cord	CORD RIS	10 – 5 – $^1/_2$
Enter M O	1 2 0	1 – 2 – 0
Tell Calc. this is M O	M O SLP	1 – 2 – 0
Ask for Radius	RAD PITCH	12 – 3 – $^5/_8$
Ask for Arc	ARC X^2	10 – 9 – $^5/_8$
Ask for Degree	DEG RUN	50.30855
Convert Degrees to DMS	* SHIFT INV DMS RCL	50.18'.31"
Ask for Area of Circle	SHIFT INV AREA 10	475.467 sq. ft.

STILL IN CIRCLE MODE.

Example #2

Given Radius = 7' – $10^{3}/_{4}$

Given Degree = 57.25°

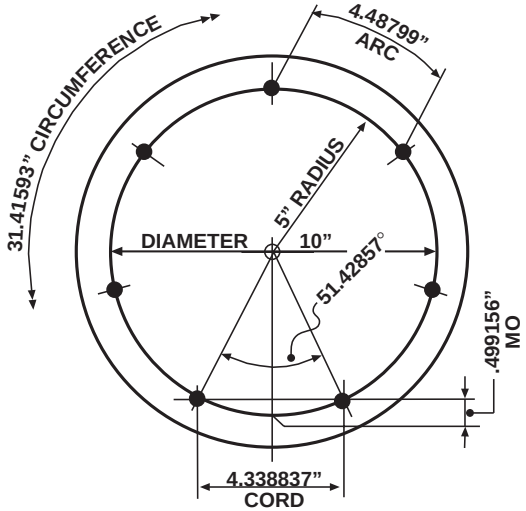
Find Arc

Find Cord

Find M O

Find Area of Circle

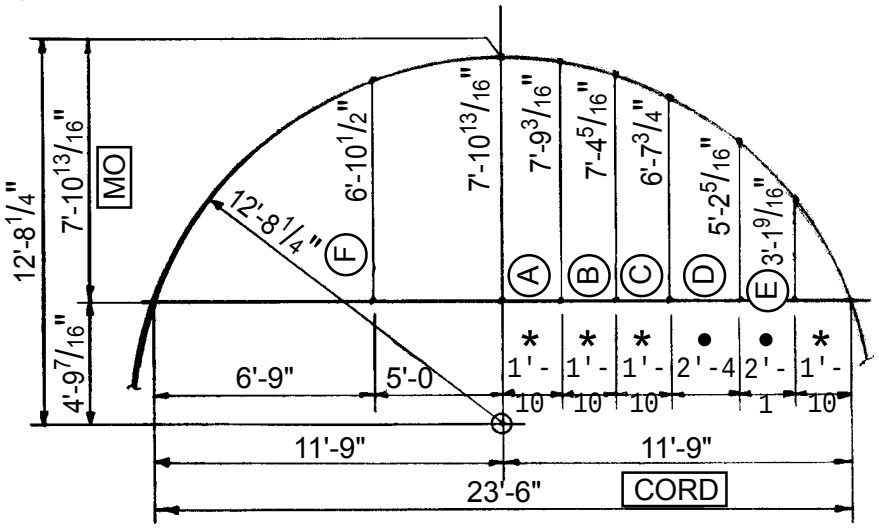
REMARKS	PRESS	DISPLAY
Enter Radius	7 10 12	7 – 10 – $^{12}/_{16}$
Tell Calc. this is Radius	RAD PITCH	7 – 10 – $^{3}/_{4}$
Go to Dec. Mode	DEC	7.895833
Enter Degree	57.25	57.25
Tell Calc. this is Degree	DEG RUN	57.25
Ask for Arc	ARC X^2	7.889525
Convert to FIS	FIS	7 – 10 – $^{11}/_{16}$
Ask for Cord	CORD RIS	7 – 6 – $^{13}/_{16}$
Ask for M O	M O SLP	0 – 11 – $^{9}/_{16}$
Ask for CIR	CIR pi AREA	49 – 7 – $^{5}/_{16}$
Ask for Area of Circle	INV 10	195.86 sq. ft.



BOLT CIRCLES CAN BE SOLVED IN SECONDS

KNOWN 10" DIA. 7 – HOLE BOLT PATTERN

REMARKS	KEYS TO PRESS	DISPLAY READS
Go to Circle Mode	INV Ø 0	0 – 0 – $^{0}/_{16}$
Go to Dec. Inch Mode	INCH INCH	0.
Enter DIAMETER	1 0 DIA DEG	10.
Divide 360° DEG. by 7 spaces	3 6 0 ÷ 7 =	51.42857°
Tell Calc. this is DEG	DEG. RUN	51.42857°
Ask for ARC	ARC x2	4.48799"
Ask for CORD	CORD RISE	4.338837"
Ask for M O	MO SLP	.499156"
Ask for CIRC.	CIR π	31.41593"



Solve Circle using the Segmented Rise Function •

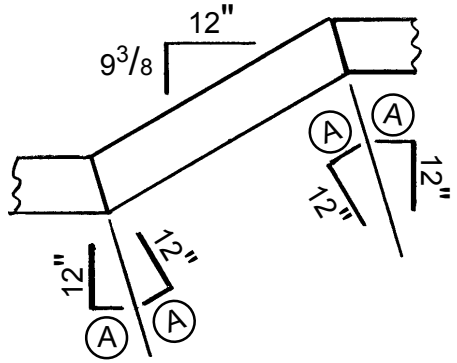
✱1'-10" DEFAULT SPACING ● – SPECIAL SPACING

Known – Radius 12'-8 1/4" Known – Cord 23'-6"

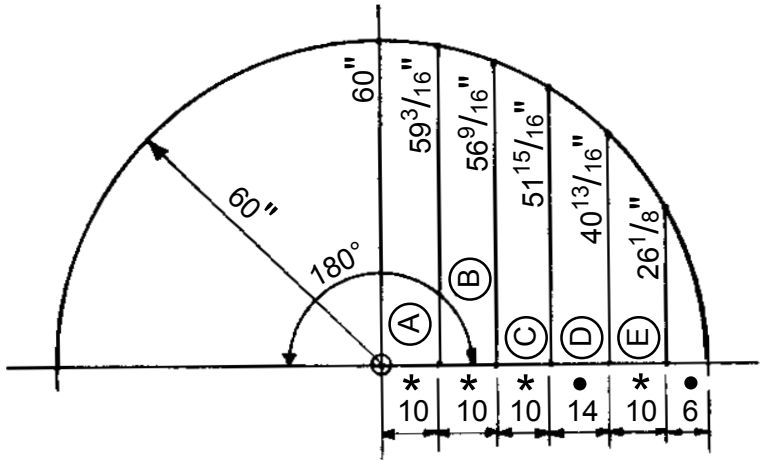
REMARKS	KEYSTROKES	DISPLAY READS
Activate Circle Mode	INV Ø 0	0 – 0 – 0/16
Enter Radius	1 2 8 4 RAD PITCH	12 – 8 – 1/4
Enter Cord	2 3 6 0 CORD RISE	23 – 6 – 0/16
Set Default Space	1 10 0 SPAC	1 – 10 – 0
Activate Rise Function	INV •	7 – 10 – 13/16
Ask for DIM. Ⓐ	+	7 – 9 – 3/16
Ask for DIM. Ⓑ	+	7 – 4 – 5/16
Ask for DIM. Ⓒ	+	6 – 7 – 3/4
Enter Spec. Space	2 4 0 SPAC	2 – 4 – 0/16
Ask for DIM. Ⓓ	+	5 – 2 – 5/16
Enter Spec. Space	2 1 0 SPAC	2 – 1 – 0/16

REMARKS	KEYSTROKES	DISPLAY READS
Ask for DIM. Ⓔ	+	3 – 1 – 9/16
To find DIM. F clear display	CLR	0 – 0 – 0/16
Reactivate Segm. Rise function	INV •	7 – 10 – 13/16
Enter Special Space	5 0 0 SPAC	5 – 0 – 0/16
Ask for DIM. Ⓕ	+	6 – 10 – 1/2

FIND THE DEGREE FOR MITER CUTS AND MITER PITCH Ⓐ



REMARKS	KEYSTROKES	DISPLAY READS
Enter Pitch	9 6 PITCH	0 – 9 3/8
Convert to Degree	DEG	37.99873
Divide Deg. by 2 This is the Deg. for miter cut.	÷ 2 =	18.99937
Ask for Tan. of Degree	TAN	.344315
Conv. Tan. to FIS. This is miter Pitch Ⓐ	FIS	0 – 4 1/8



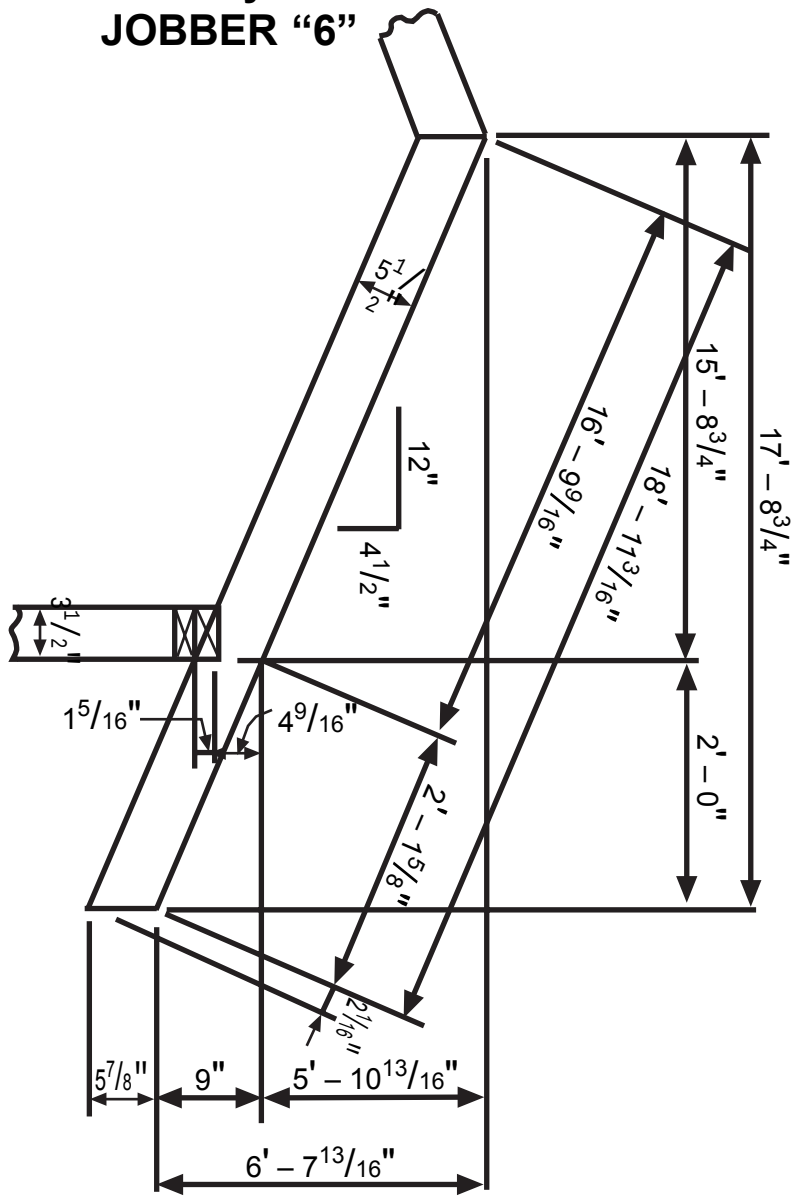
Solve One/Half of a Circle using the Inch Mode

✱ 10" DEFAULT SPACING ● – SPECIAL SPACING

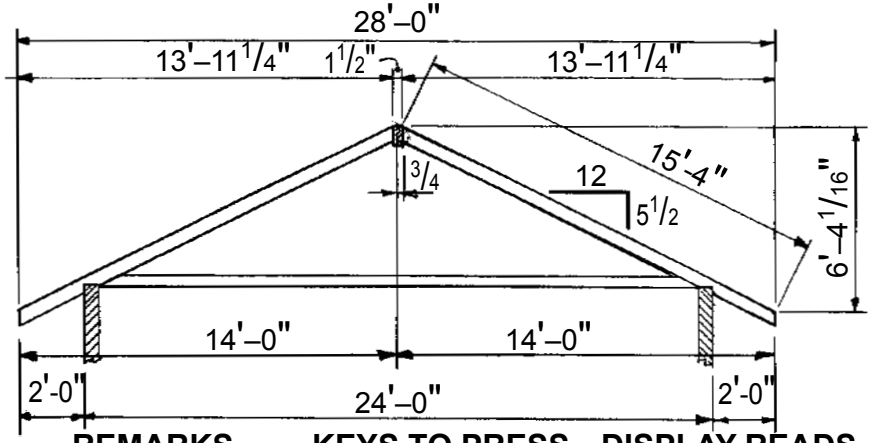
Known – Radius 60" Known – Degree 180°

REMARKS	KEYSTROKES	DISPLAY READS
Go to Circle Mode	Ø: INV 0	0 – 0 – 0
Go to Dec. Inch Mode	INCH INCH	0.
Enter Radius 60"	RAD: 6 0 PITCH	60.
Enter 180 Degrees	DEG: 1 8 0 RUN	180.
Set Default Space	1 0 SPAC	10.
Convert to Inch/Fraction Mode	INCH	$10^{0}/_{16}$
Activate Solver Mode	INV •	$60^{0}/_{16}$
Ask for DIM. A	+	$59^{3}/_{16}$
Ask for DIM. B	+	$56^{9}/_{16}$
Ask for DIM. C	+	$51^{15}/_{16}$
Enter Special Space	1 4 0 SPAC	$14^{0}/_{16}$
Ask for DIM. D	+	$40^{13}/_{16}$
Ask for DIM. E	+	$26^{1}/_{8}$

Roof rafters and trusses, even Hip and Valley, can be figured instantly with JOBBER "6"



The roof we are working on has a **5 1/2** inch pitch with a span of **24' 0"**, as indicated in the sketch below. Find the common rafter length, hip pitch, hip length and jack lengths.

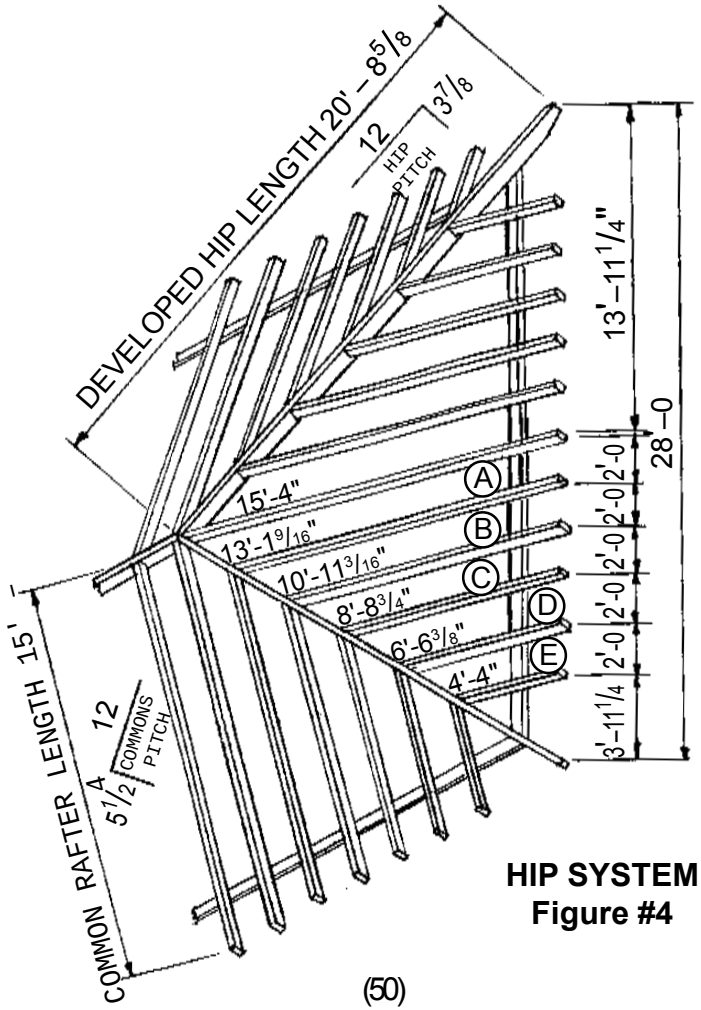


REMARKS	KEYS TO PRESS	DISPLAY READS
Enter the PITCH	5 8 PITCH	5 – 8/16
Enter Rafter RUN	1 3 11 4 RUN	13 – 11 – 1/4
Ask for Rafter Length	SLP	15 – 4 – 0
Go back to PITCH	PITCH	5 – 1/2
Ask for Hip Pitch Tangent	HIP	.324051
Convert to FIS. DIM	FIS	3 – 7/8
Ask for Hip Length	INV HIP	20 – 8 – 5/8
Now to solve for Jacks Fig. #4		
Enter Jack Spacing	2 0 0 SPAC	2 – 0 – 0
Activate Jack Function	INV JACK DEC	15 – 4 – 0
Find Jack Length (A)	+	13 – 1 – 9/16
Find Jack Length (B)	+	10 – 11 – 3/16
Find Jack Length (C)	+	8 – 8 – 3/4
Find Jack Length (D)	+	6 – 6 – 3/8
Find Jack Length (E)	+	4 – 4 – 0
To exit Jack Mode	CLR	0 – 0 – 0

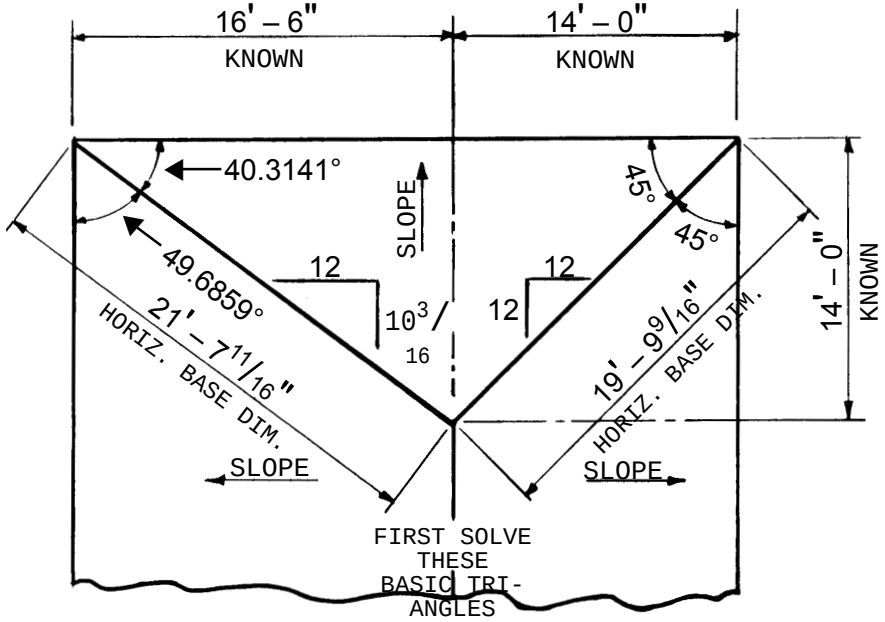
To find the degree cut for the common rafters, recall the 5 1/2 pitch and press the INV TAN keys

5 1/2" PITCH = **24.62356 DEGREES.**

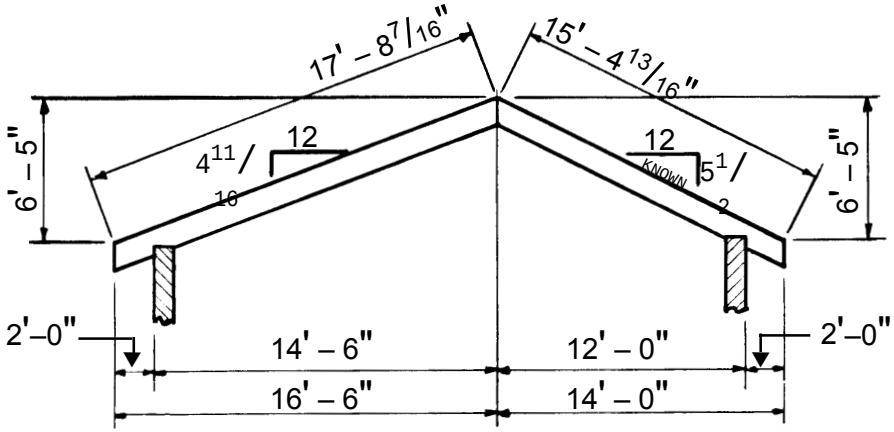
To find the exact degree cut for the hip beam, recall the **5 1/2**" roof pitch to the display by pressing INV PITCH then press HIP. The display will read .324091 which is the tangent for the hip. Now press INV TAN and the hip degree cut will be displayed **17.95702 DEGREES.**



HIP SYSTEM
Figure #4



HIP ROOF PLAN



SEE NEXT PAGE
FOR
WRITTEN CALCULATIONS

SOLVE THE 45° HIP ROOF

With the common roof dimension in the triangle mode keys ($5^1/_2$" Pitch) (14'-0 Run) (6'-5 Rise) (15'-$4^{13}/_{16}$ Slope).

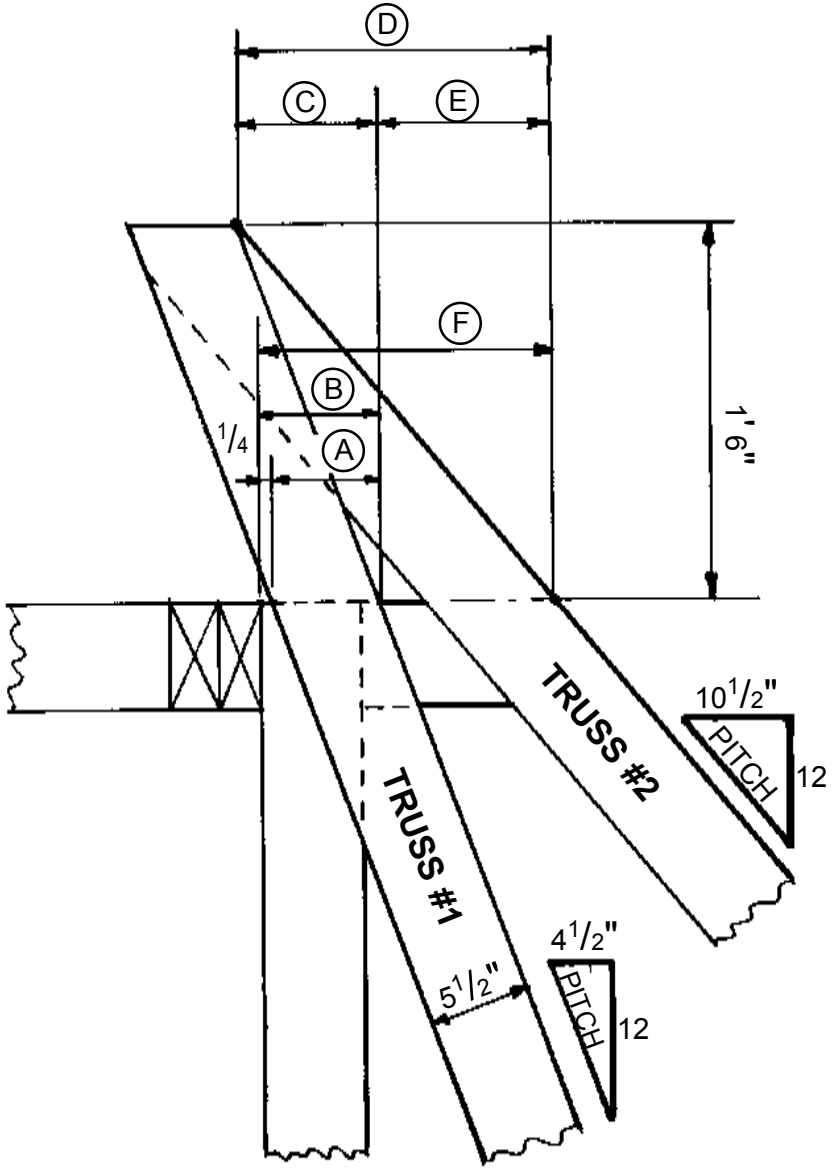
Find the hip beam Pitch, Length and Angle Cut.

REMARKS	KEYSTROKES	DISPLAY READS
Recall the roof pitch to the display	INV PITCH	$0 – 5^1/_2$
Ask for Hip Tangent	HIP	.324091
Convert to FIS for Pitch	FIS	$0 – 3^7/_8$
Ask for Angle Cut for Beam Ends	INV DEG TAN	17.89613°
Go back to FIS Mode	FIS	$17 – 10^3/_4$
Ask for Hip Beam developed length	INV LGTH HIP	$20 – 9^3/_4$

SOLVING FOR IRREGULAR (KNOWN 45°) HIP

First find the diagonal (horiz. base dim.)

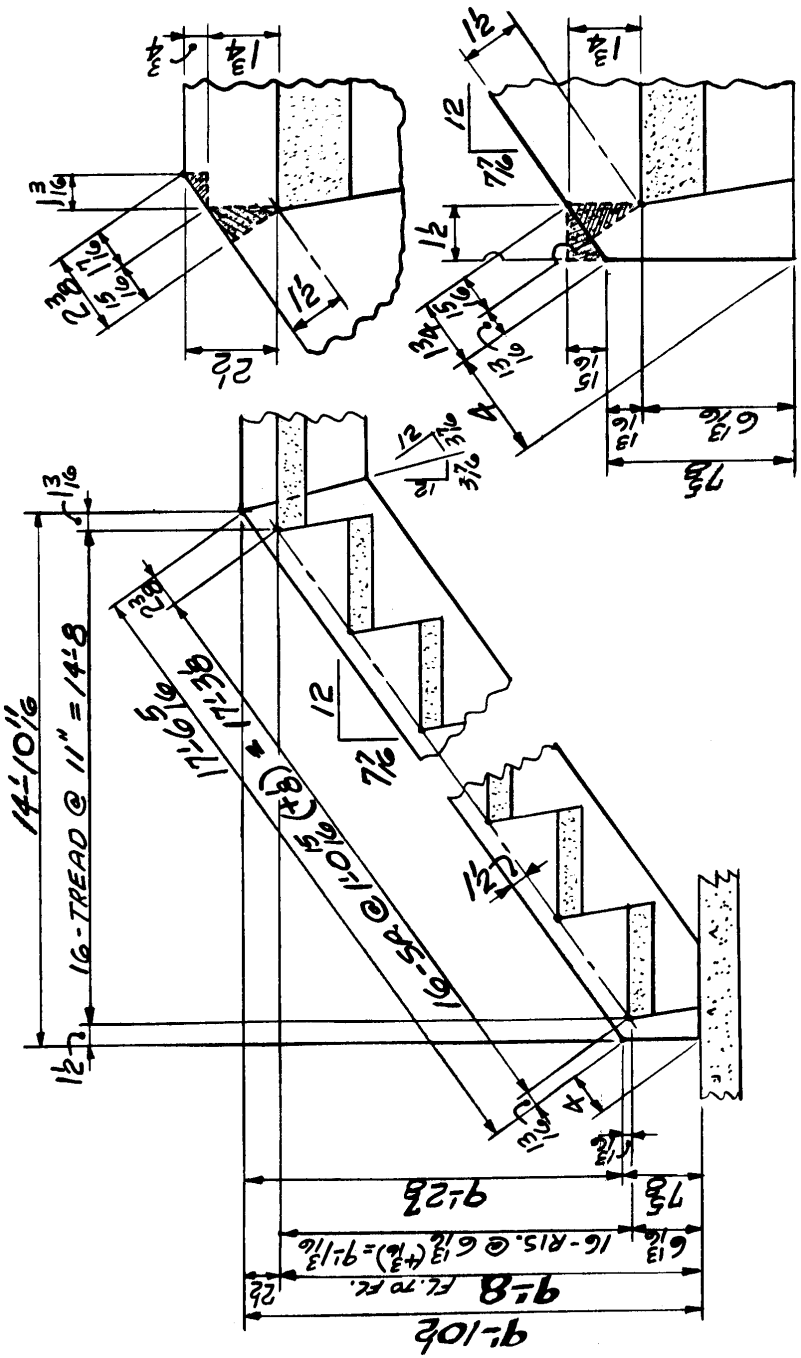
REMARKS	KEYSTROKES	DISPLAY READS
Enter known bldg. run	1 6 6 0 RUN	$16 – 6^0/_{16}$
Enter known bldg. rise	1 4 0 0 RISE	$14 – 0^0/_{16}$
Ask for the horiz. slope	SLP	$21 – 7^{11}/_{16}$
Now put this slope Dim in the Run (to do this press the = key first)	= RUN	$21 – 7^{11}/_{16}$
Now enter the Roof Rise	6 5 0 RIS	$6 – 5^0/_{16}$
Ask for the Hip Pitch	PITCH	$0 – 3^9/_{16}$
Ask for the Hip Beam Length	SLP	$22 – 6^7/_8$



Find bearing depth for TRUSS #1 and #2 at wall line.

REMARKS	KEYS TO PRESS	DISPLAY READS
Enter PITCH Truss #1	4 8 PITCH	$4\frac{1}{2}$
Enter $5\frac{1}{2}$ Member Size	5 8	$5\frac{1}{2}$
Tell Calc. this is RUN	RUN	$5\frac{1}{2}$
Ask for SLOPE, find DIM A	SLP	$5\frac{7}{8}$
Add $\frac{1}{4}$" Heel, find DIM B	+ 4 =	$6\frac{1}{8}$
Enter 1'-6 overhang	1 6 0	$1 - 6\frac{0}{16}$
Tell Calc. this is RUN	RUN	$1 - 6\frac{0}{16}$
Ask for RISE C	RISE	$6\frac{3}{4}$
Enter PITCH Truss #2	10 8 PITCH	$10\frac{1}{2}$
Ask for RISE DIM D	RISE	$1 - 3\frac{3}{4}$
Subtract DIM C to find DIM E	– 6 12 =	$9\frac{0}{16}$
Add DIM B to find DIM F	+ 6 2 =	$1 - 3\frac{1}{8}$

Bearing depth for Truss #1 = $6\frac{1}{8}$
Bearing depth for Truss #2 = $1 - 3\frac{1}{8}$



WRITTEN CALCULATIONS ON FOLLOWING PAGES

HOW TO CALCULATE A STAIR

Start with the known of 9' - 8" Floor to Floor Dimension

RISERS

We must first decide what is the maximum riser height we want to use or that the code will allow.

In many areas 7" is the max.

So now we must determine how many risers are required. By dividing 7" into 9' - 8".

Enter 9' – 8" in display [9] [8] [0]

Divide by 7" [÷] [7] [0] [=] 16.57143

The answer is over 16, so that means in order for the risers not to exceed 7" we must have 17 risers.

To determine exactly how high each riser will be, we divide the 17 risers into the 9' – 8" fl. to fl. dim.

Put 9' – 8" in the display

[9] [8] [0] [÷] [1] [7] [0] [0] [=] **6 13/16** height for each riser.

But we must check and see if there was a **remainder**. By pressing [INV] [÷] 0 – 0 – 3/16 (there was a **3/16 remainder** that must be taken into account).

We will make the **1st riser 6 13/16** and distribute the 3/16 remainder among the other 16 risers.

For the total height of the other 16 risers we subtract $6^{13}/_{16}$ from 9' – 8".

[9] [8] [0] [–] [6] [13/16] = 9 – 1 – 3/16

1st riser = $6^{13}/_{16}$ 16 - Riser @ $6^{13}/_{16}$ + ($^{3}/_{16}$) = 9' – 1 3/16

TREAD

There is always one less tread than the total risers.

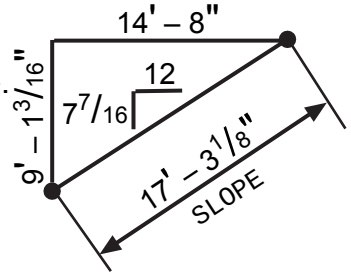
There are 17 total risers (fl. to fl.). There will be **16 tread** (always subtract the bottom riser).

Many codes require that commercial tread be a min. of 11" inches wide (so we will use 0' – 11").

So we have 16 tread @ 11 inches.

Multiply it out [11] [0] [X] [1] [6] [0] [0] [=] 14' – 8"

By dropping the bottom riser, we have a right triangle which we can solve with the triangle mode.



[9] [1] [3] [RISE]

[1] [4] [8] [0] [RUN]

Ask for [SLOPE] 17' – 3 1/8"

Ask for [PITCH] 0' – 7 7/16"

Now divide 17' – 3 1/8" by 16 spaces to find what each space will be along the slope:

[1] [7] [3] [2] [÷] [1] [6] [0] [0]

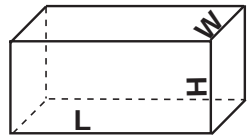
[=] 1' – 0 15/16" Check for remainder

[INV] [÷] 0' – 0 – 1/8 (**1/8" remainder**)

So the slope dim. will read **16 spaces @ 1' – 0 15/16 (+ 1/8) = 17' – 3 1/8"**

The Pitch (or bevel) for stair is **7 7/16 to 12**.

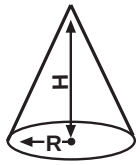
To cube a DIM. use the [x^2] key to raise it to the 2nd power then multiply the results one more time by itself.



Surface Area = 2HW + 2HL + LW

Volume = L x W x H

RECTANGLE PRISM



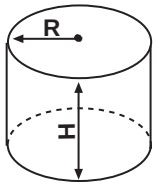
CONE

Cone Surface Area = π x R x $\sqrt{R^2 + H^2}$

Surface Area for Bottom = π x R^2

Volume = $\frac{\pi \times R^2 \times H}{3}$

Cube 2' [FIS] [2] [x^2] [x] [2] [=] 8'



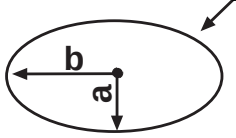
CYLINDER

Surface Area = 2 x π x R x H

Surface Area for Top or Bottom = R^2 x π

Volume = R^2 x π x H

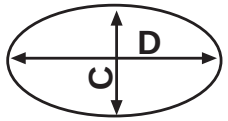
Area = π x a x b



ELLIPSE

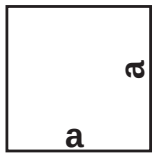
Area = [7854] x D x C

TYP. FACTOR



ELLIPSE

Area = a^2



SQUARE

Area = L x W

RECTANGLE

Limited Six Month Warranty

The Jobber 6 calculator is warranted against defects in materials and workmanship for 6 months from the original date of purchase. The warranty does not cover batteries or vinyl case, and is void if the calculator is damaged by accident, misuse, neglect, or improper service. During the warranty period, we will repair or replace at no charge a calculator that proves defective provided you ship it prepaid and insured to Jobber Instruments with proof of purchase.

No other express warranty is given. The repair or replacement of the calculator is your exclusive remedy. Any other implied warranty of merchantability or fitness is limited to the 6 month duration of this warranty. Jobber Instruments shall not be liable for loss of use of the calculator or other incidental or consequential cost, expenses or damages incurred by the consumer or any other user.

Some states, countries or provinces do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state, country to country, or province to province. Seller makes no express or implied warranty with regard to the keystroke procedures and example material offered or their merchantability or their fitness for any particular purpose whatsoever. The keystroke procedures and pre-programmed material are sold on an "as is" basis. The entire risk as to their quality and performance is with the user. Seller shall not be liable for any incidental or consequential damages in connection with or arising out of the furnishing or performance of the keystroke procedures as represented.

* IMPORTANT NOTE *

IN CASE THE CALCULATOR SHOULD EVER LOCK UP

JOBBER 6 contains a very powerful CPU and is sensitive to rough handling or static electricity, as is any computer.

The **JOBBER 6** was engineered to stand up to "in the field use," but in conditions of high static electricity (very dry conditions/carried in a wool shirt pocket) or being dropped, the unit may "lock-up" (not responding to the on or off buttons).

It can be reset simply by removing the battery and then putting it back into position.

Low battery voltage can also cause the calculator to lock up, and this can be corrected by replacing the battery.

REPAIRS

Please visit our website at
WWW.JOBBERCALCULATOR.COM
Select the SERVICE link to access the service form which needs to be filled out and mailed with the calculator.

If you are unable to access the service form, include your name, return address, and daytime phone numbera and a note describing the nature of the defect. Include a check or money order for $25 to cover the cost of the repair and return shipping.

Mail to:
Jobber Instruments
Attn: Repair Dept.
1211 Douglass Ln.
Sevierville, TN 37876