



TI-83/84 Calculator Program Code

**** These programs are available for download on our site as .8xp files that can be transferred directly to your calculator. However, the process of installing them on the calculators can be difficult to do. If you prefer, the program code is included for each program. For each, create a new Program using the PRGM key and enter the code below using the PRGM→I/O menu and the main calculator keys.**

A tutorial on basic TI-84 CE calculator programming can be found here:

<https://www.youtube.com/watch?v=8eUHk0EOMmg&t=3s>

AVGINEED – Finds the score/value needed to achieve a certain mean, given the current average, the number of scores already achieved, and the desired mean

```
PROGRAM:AVGINEED
:ClrHome
:Disp "HOW MANY SCORES"
:Disp "DO YOU HAVE?"
:Input N
:Disp "WHAT IS THE SUM"
:Disp "OF ALL SCORES?"
:Input S
:Disp "WHAT IS THE"
:Disp "DESIRED AVERAGE?"
:Input A
:Disp " "
:(A(N+1)-S)→D
:Disp "TO ACHIEVE THAT"
:Disp "AVERAGE, THIS"
:Disp "VALUE IS NEEDED:"
:Disp D
```

DISTANCE – Finds the distance between 2 points

```
PROGRAM:DISTANCE
:ClrHome
:Disp "X1"
:Input A
:Disp "Y1"
:Input B
:Disp "X2"
:Input C
:Disp "Y2"
:Input D
:((A-C)2+(B-D)2)→E
:Disp "DISTANCE:"
:Disp "SQUARE ROOT OF:"
:Disp E
:(√(E))→F
:Disp "APPROX DISTANCE:"
:Disp F
```

ENDPTMID – Finds one endpoint of a segment when you are given the midpoint and the other endpoint

```
PROGRAM:ENDPTMID
:ClrHome
:Disp "ENDPOINT:"
:Disp "X?"
:Input M
:Disp "Y?"
:Input N
:Disp " "
:Disp "MIDPOINT:"
:Disp "X?"
:Input A
:Disp "Y?"
:Input B
:(2A-M)→P
:(2B-N)→Q
:Disp " "
:Disp "OTHER ENDPT:"
:Disp "X COORDINATE:"
:Disp P►Frac
:Disp "Y COORDINATE:"
:Disp Q►Frac
```

EQOFLINE – Finds the slope and y-intercept of a line given 2 points

```
PROGRAM:EQOFLINE
:ClrHome
:Disp "X1?"
:Input X
:Disp "Y1?"
:Input Y
:Disp "X2?"
:Input Z
:Disp "Y2?"
:Input W
: $((W-Y)/(Z-X)) \rightarrow M$ 
: $(Y-MX) \rightarrow B$ 
:Disp " "
:Disp "Y=MX+B"
:Disp "Slope (M):"
:Disp M►Frac
:Disp "Y Intercept (B):"
:Disp B►Frac
```

EQSYMBOL – Provides a reminder of the mathematical symbols that are associated with particular words in percentage problems

```
PROGRAM:EQSYMBOL
:ClrHome
:Disp " "
:Disp "WHAT: X"
:Disp "IS: ="
:Disp "OF: * (MULTIPLY)"
:Pause
:Disp " "
:Disp "CHANGE PERCENTS"
:Disp "TO DECIMALS"
```

FINDN – Finds the number of sides in a polygon given the sum of interior angles; and finds the number of sides in a regular polygon given the measure of one interior or exterior angle

```
PROGRAM:FINDN
:ClrHome
:Menu("WHAT DO YOU
KNOW?","SUM
INTERIOR",1,"ONE
INTERIOR",2,"ONE
EXTERIOR",3)
:Lb1 1
:Disp "WHAT IS SUM OF"
:Disp "INTERIOR ANGLES?"
:Input S
:(S/180+2)→N
:Disp " "
:Disp "NUMBER OF SIDES:"
:Disp N
:Stop
:Lb1 2
:Disp "WHAT IS ONE"
:Disp "INTERIOR ANGLE?"
:Input I
:(360/(180-I))→P
:Disp " "
:Disp "NUMBER OF SIDES:"
:Disp P
:Stop
:Lb1 3
:Disp "WHAT IS ONE"
:Disp "EXTERIOR ANGLE?"
:Input E
:(360/E)→M
:Disp " "
:Disp "NUMBER OF SIDES:"
:Disp M
```

GCF – Finds the Greatest Common Factor for 2 numbers

```
PROGRAM:GCF
:ClrHome
:Disp "FIRST NUMBER?"
:Input A
:Disp "SECOND NUMBER?"
:Input B
:(gcd(A,B))→G
:Disp " "
:Disp "GCF IS"
:Disp G
```

INCRDECR – Finds a new amount given an original amount and the percent of increase or decrease

```
PROGRAM:INCRDECR
:ClrHome
:Disp "ORIGINAL AMOUNT?"
:Input O
:Disp "PERCENT CHANGE?"
:Input P
:((1+P)/100)*O→I
:((1-P)/100)*O→D
:Disp " "
:Disp "INCREASE:"
:Disp I
:Disp "DECREASE:"
:Disp D
```

INTEXT – Finds the sum of interior and exterior angles for a polygon, and the measure of one interior and exterior angle for a regular polygon

```
PROGRAM:INTEXT
:ClrHome
:Disp "HOW MANY SIDES?"
:Input N
:(180*(N-2))→S
:(S/N)→I
:(360/N)→E
:Disp " "
:Disp "SUM INTERIOR:"
:Disp S
:Disp " "
:Disp "REGULAR POLYGON:"
:Disp "ONE INTERIOR:"
:Disp I
:Pause
:Disp " "
:Disp "SUM EXTERIOR: 360"
:Disp " "
:Disp "REGULAR POLYGON:"
:Disp "ONE EXTERIOR:"
:Disp E
```

MANDB – Finds the slope, y-intercept, and x-intercept of a line in standard form

```
PROGRAM:MANDB
:ClrHome
:Disp "GIVEN LINE:"
:Disp "AX+BY=C"
:Disp " "
:Disp "A?"
:Input A
:Disp "B?"
:Input B
:Disp "C?"
:Input C
:(C/B)→Y
:(-A/B)→M
:(C/A)→X
:Disp " "
:Disp "SLOPE (M):"
:Disp M►Frac
:Disp "Y INTERCEPT (B):"
:Disp Y►Frac
:Pause
:Disp " "
:Disp "X INTERCEPT"
:Disp "(IF NEEDED):"
:Disp X►Frac
```

MIDPOINT – Finds the midpoint of a segment given the 2 endpoints

```
PROGRAM:MIDPOINT
:ClrHome
:Disp "X1"
:Input A
:Disp "Y1"
:Input B
:Disp "X2"
:Input C
:Disp "Y2"
:Input D
:((A+C)/2)→E
:((B+D)/2)→F
:Disp "X COORD:"
:Disp E►Frac
:Disp "Y COORD:"
:Disp F►Frac
```

PYTHAG – Finds the missing leg or hypotenuse of a right triangle, given the measures of the other 2 sides

```
PROGRAM:PYTHAG
:ClrHome
:Menu("FIND
WHAT?","LEG",1,"HYPOTENUSE
",2)
:Lb1 1
:Disp "OTHER LEG?"
:Input B
:Disp "HYPOTENUSE?"
:Input C
:((C2)-(B2))→D
:(√(D))→E
:Disp "LEG="
:Disp E
:Stop
:Lb1 2
:Disp "ONE LEG?"
:Input A
:Disp "OTHER LEG?"
:Input B
:(A2+B2)→D
:(√(D))→E
:Disp "HYPOTENUSE="
:Disp E
```


QUAD – Solves quadratic equations, given the values of A, B, and C. Will alert user if there are no real solutions. Also allows user to check their quadratic factorizations

```
PROGRAM:QUAD
:ClrHome
:Disp "A?"
:Input A
:Disp "B?"
:Input B
:Disp "C?"
:Input C
:(B2-4AC)→D
:If D<0
:Then
:Disp "NO REAL"
:Disp "SOLUTIONS"
:Else
:((-B+√(D))/(2A))→E
:((-B-√(D))/(2A))→F
:Disp "SOLUTIONS:"
:Disp E►Frac
:Disp F►Frac
:End
```

SLOPE – Finds the slope of a line given 2 points on the line

```
PROGRAM:SLOPE
:ClrHome
:Disp "X1"
:Input A
:Disp "Y1"
:Input B
:Disp "X2"
:Input C
:Disp "Y2"
:Input D
:((D-B)/(C-A))→M
:Disp "SLOPE:"
:Disp M►Frac
```

SOLVSYST – Solves a system of 2 equations with 2 variables in standard form

```
PROGRAM:SOLVSYST
:ClrHome
:Disp "AX + BY = C"
:Disp "DX + EY = F"
:Disp " "
:Disp "A?"
:Input A
:Disp "B?"
:Input B
:Disp "C?"
:Input C
:Disp "D?"
:Input D
:Disp "E?"
:Input E
:Disp "F?"
:Input F
:(AE-BD)→R
:(CE/R-BF/R)→X
:(-CD/R+AF/R)→Y
:Disp " "
:Disp "SOLUTION:"
:Disp "X:"
:Disp X►Frac
:Disp "Y:"
:Disp Y►Frac
```