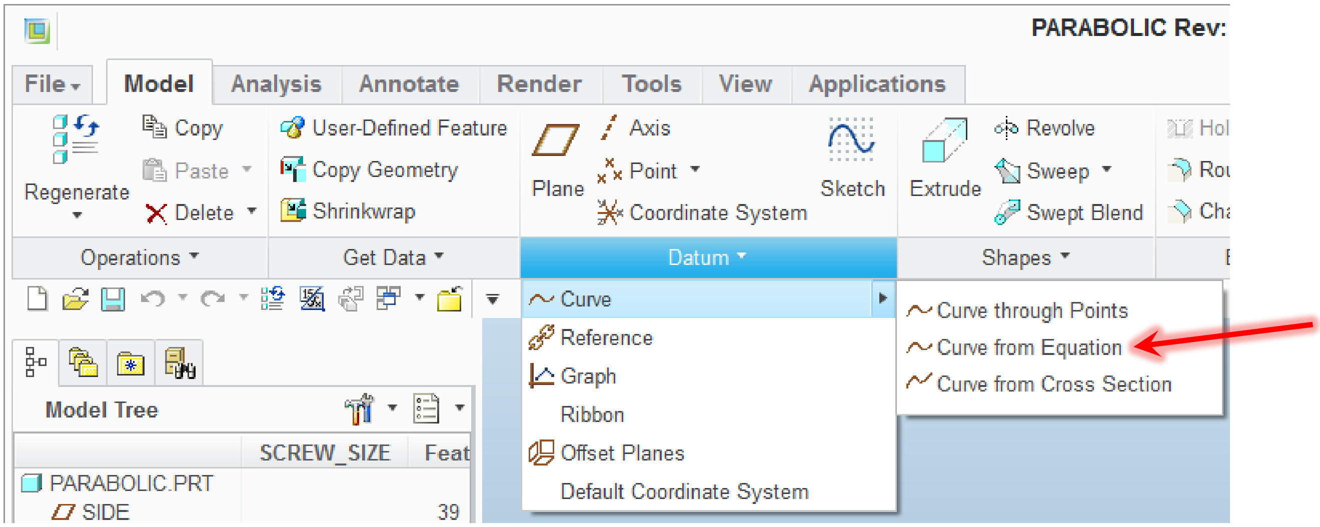
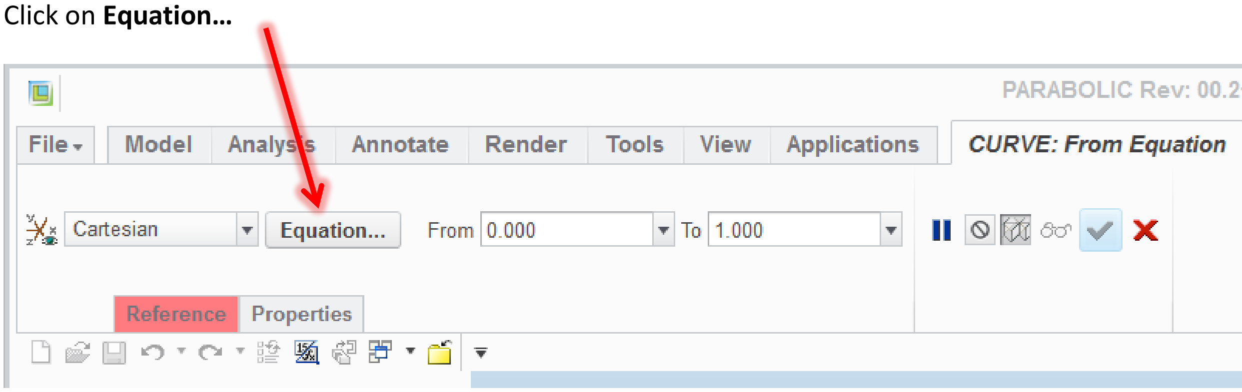
ELLIPSE EQUATION

Model => Datum => Curve => curve from Equation



Click on **Equation…**



Enter the following in the upper half of the window below. This is the ellipse equation.

a=EQA

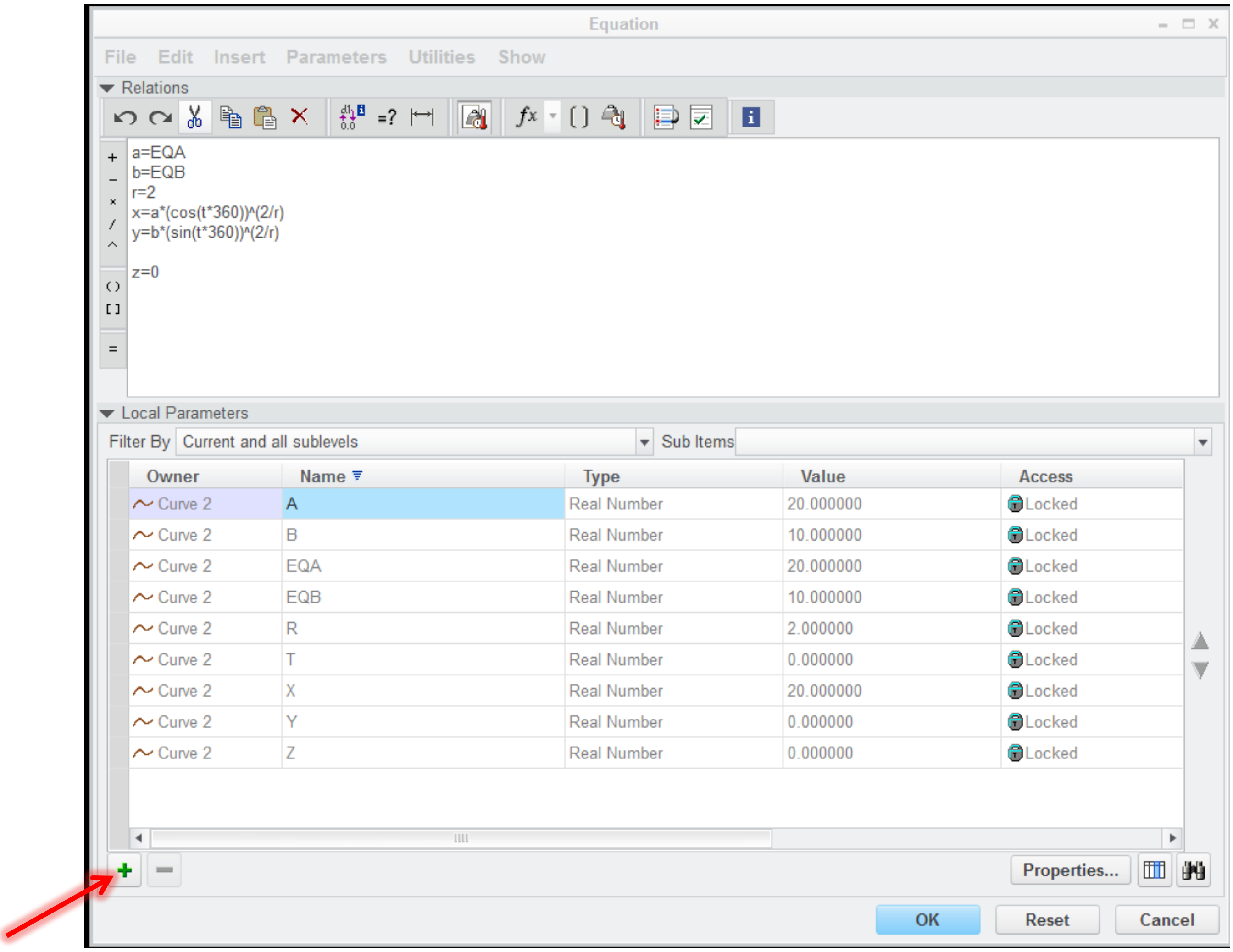
b=EQB

r=2

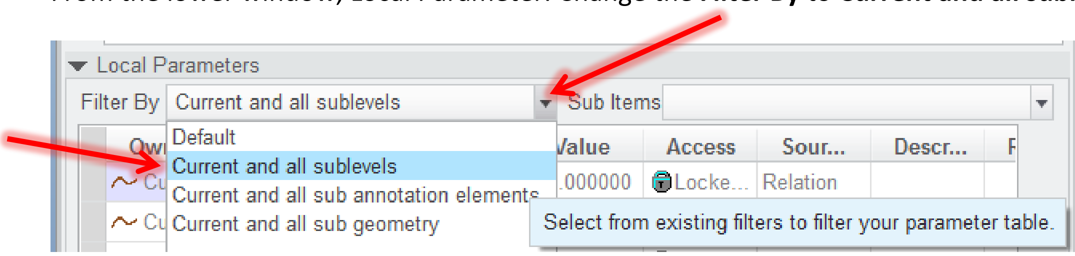
x=a*(cos(t*360))^(2/r)

y=b*(sin(t*360))^(2/r)

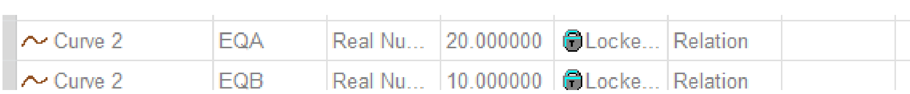
z=0



From the lower window, Local Parameter. Change the **Filter By** to **Current and all sublevels**.

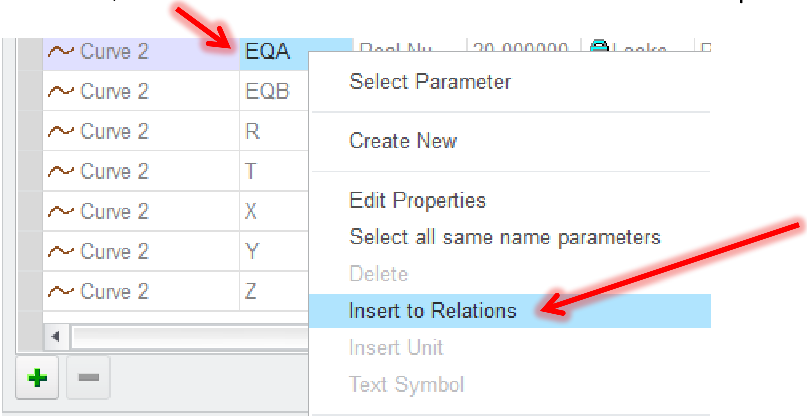


Add two additional parameters by clicking on the Green plus twice.

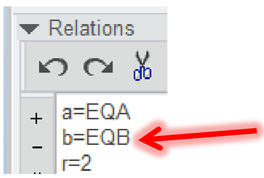


Name them EQA and EQB.

Select EQA and RMB **Insert into Relations**. Have the cursor in position to receive the parameter.



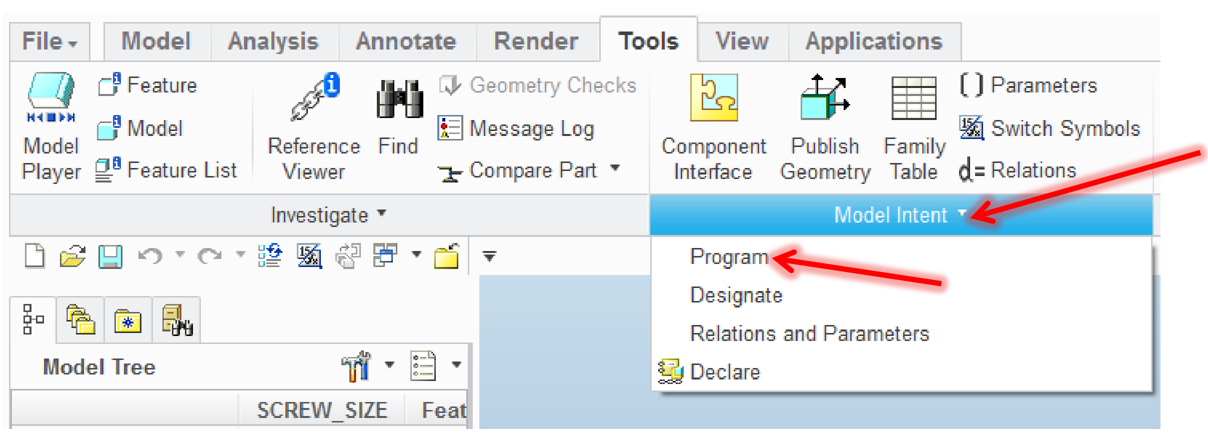
Repeat for EQB

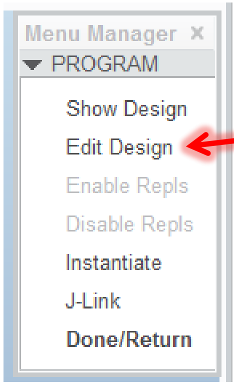


OK

Create the model program

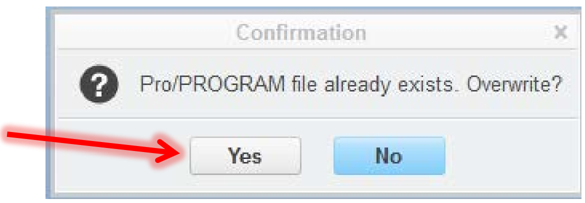
Tools => Model Intent => Program => Edit design => From Model => Yes





Select **Edit Design**

From Model



Yes.

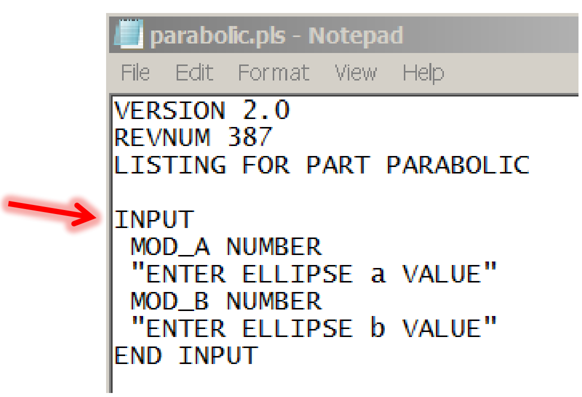
Enter the lines under INPUT

MOD_A   NUMBER

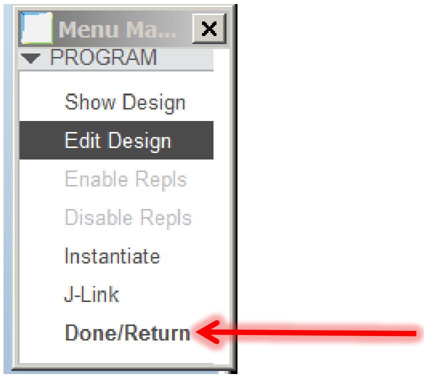
“ENTER ELLIPSE a VALUE”

MOD_B   NUMBER

“ENTER ELLIPSE b VALUE”

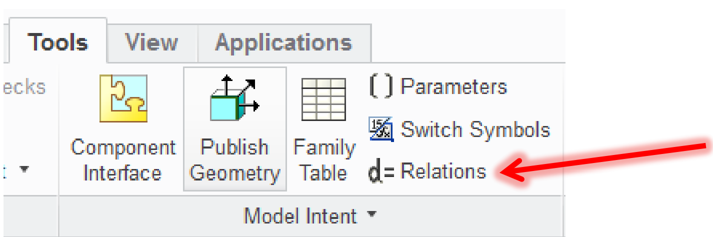


File => Save



Click on **Done/Return**

Tools => d=Relations



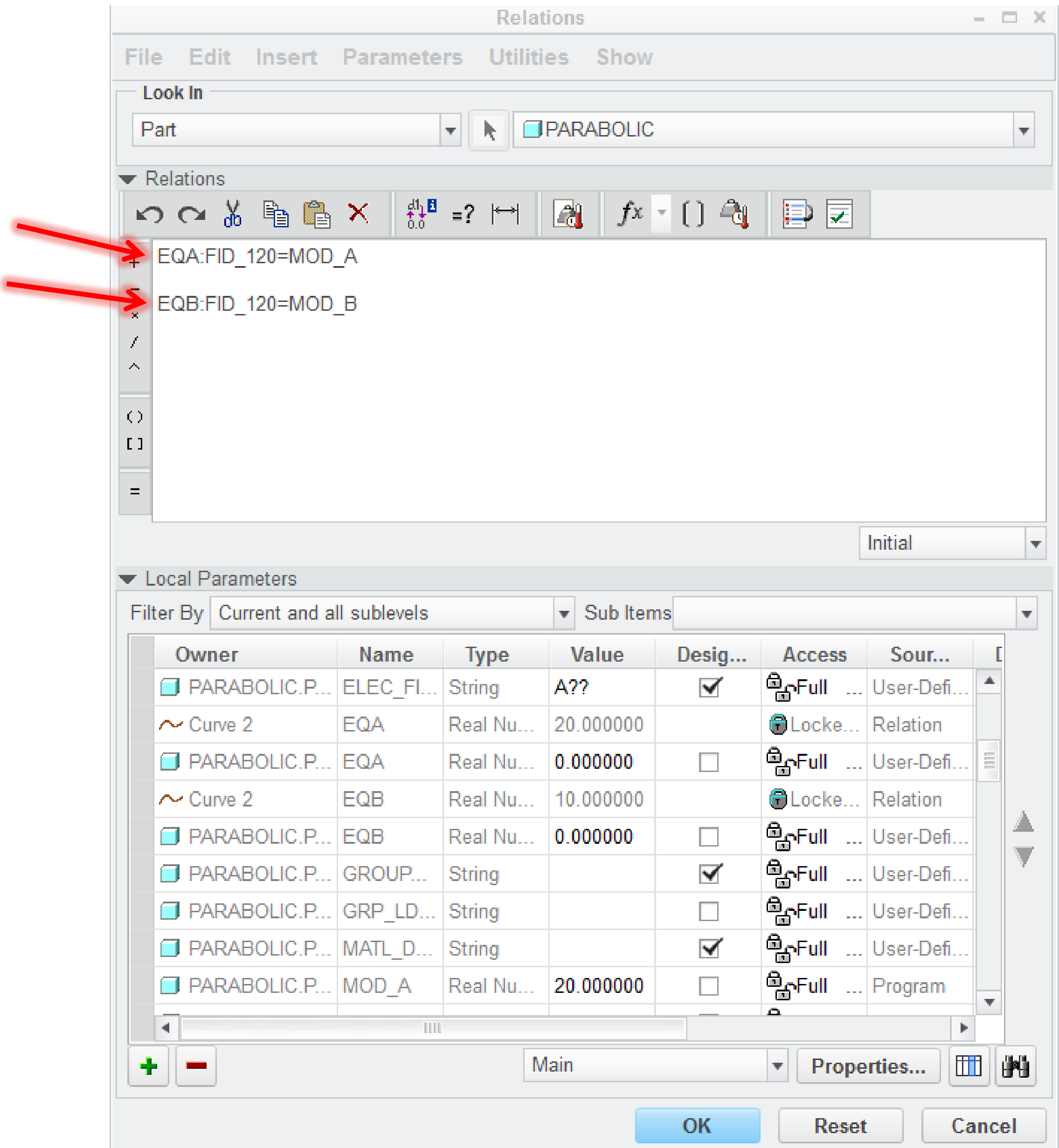
These are the important lines. They have the Feature FID_120, which tie the program to the equation.

Thanks Me Givens!

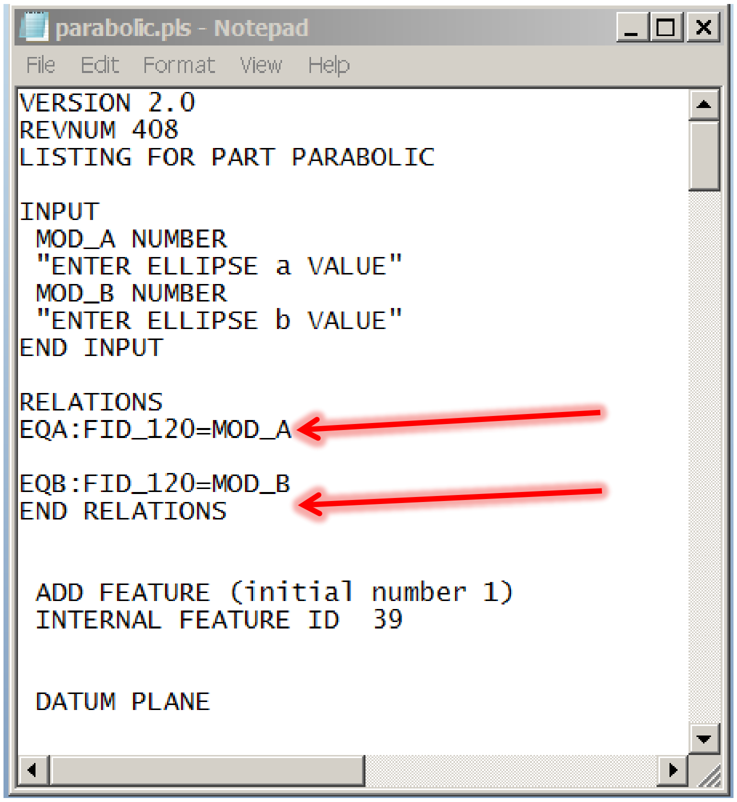
EQA:FID_120=MOD_A

EQB:FID_120=MOD_B

When selected and RMB Insert into Relations, the FID number is automatic found and written into the relations of both the program and the relations.


Relations
File Edit Insert Parameters Utilities Show
Look In
Part
PARABOLIC
Relations
EQA:FID_120=MOD_A
EQB:FID_120=MOD_B
Initial
Local Parameters
Filter By Current and all sublevels
Sub Items
Owner Name Type Value Desig... Access Sour...
PARABOLIC.P... ELEC_FI... String A?? Full ... User-Defi...
Curve 2 EQA Real Nu... 20.000000 Locke... Relation
PARABOLIC.P... EQA Real Nu... 0.000000 Full ... User-Defi...
Curve 2 EQB Real Nu... 10.000000 Locke... Relation
PARABOLIC.P... EQB Real Nu... 0.000000 Full ... User-Defi...
PARABOLIC.P... GROUP... String Full ... User-Defi...
PARABOLIC.P... GRP_LD... String Full ... User-Defi...
PARABOLIC.P... MATL_D... String Full ... User-Defi...
PARABOLIC.P... MOD_A Real Nu... 20.000000 Full ... Program
Main
Properties...
OK Reset Cancel

Program

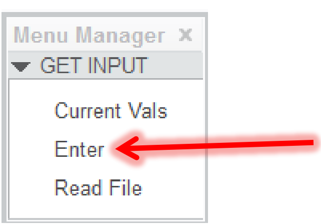


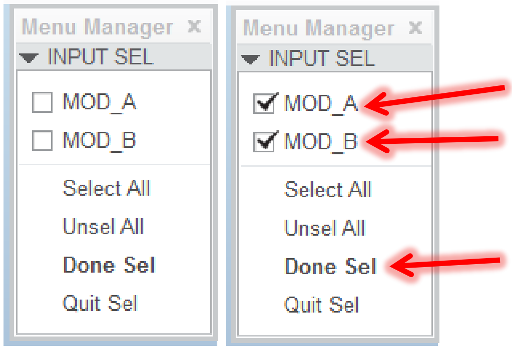

```
VERSION 2.0
REVNUM 408
LISTING FOR PART PARABOLIC

INPUT
 MOD_A NUMBER
 "ENTER ELLIPSE a VALUE"
 MOD_B NUMBER
 "ENTER ELLIPSE b VALUE"
END INPUT

RELATIONS
EQA:FID_120=MOD_A

EQB:FID_120=MOD_B
END RELATIONS


 ADD FEATURE (initial number 1)
 INTERNAL FEATURE ID  39


 DATUM PLANE
```

<u>To run the program</u>

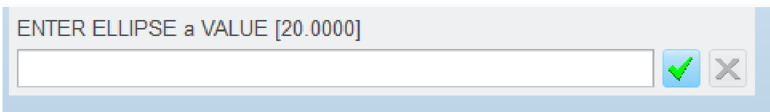
Enter **CTRL G**

Click on **Enter,** then check box **MOD_A** and **MOD_B**, and **Done Sel**

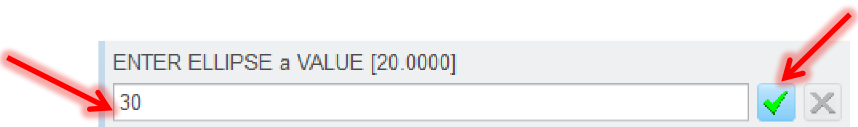




Enter the major **a VALUE,** the [20.000] is the current value. The value will be 0.000 for the first run.

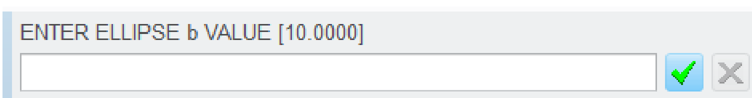


This time I want a value of 30.

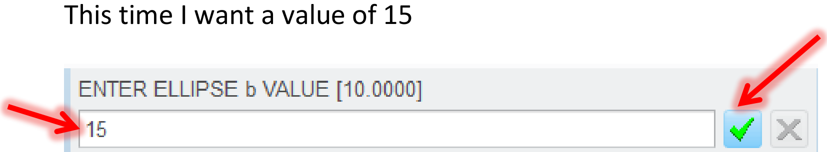


Click on the Green check box.

Enter the minor **b VALUE,** the [10.000] is the current value. The value will be 0.000 for the first run.

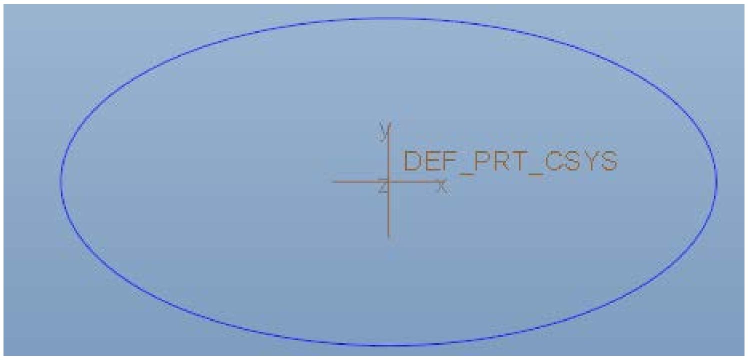


This time I want a value of 15



Click on the Green check box.

The ellipse is created.



CTRL G to run the program to modify the a and b values.

The basic fundamentals of Parametric Part Programming will add diversity and opportunities to enhance your usage of the Creo software. This is the first of many geometric mathematical equations presentations to follow.

Thank you for your continued learning. Please contact me for any assistance.

Daniel Pasholk