
Subject: Re: % Program caused arithmetic error: Floating illegal operand

Posted by [Dick Jackson](#) on Fri, 15 May 2015 01:29:37 GMT

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On Thursday, 14 May 2015 16:39:39 UTC-7, jiaxinxin wrote:

```
> xc=250 & yc=250 & r=170 & for i=yc-r , yc+r do print,floor(-sqrt(1.*r^2-1.*(i-yc)^2)+xc)
> if charge r=185 , i get the following error:
> % Program caused arithmetic error: Floating illegal operand
> I don't know what to do to get rid of this error. Do you have any ideas?
```

Yes, your value 'r' is a short integer, so notice what happens to r^2 :

```
IDL> 170^2
```

```
28900
```

```
IDL> 185^2
```

```
-31311
```

I will guess that this is not what you wanted. I'd suggest using float values, at least for 'r' and 'c' (which looks like it could give trouble, too). Then you can get rid of the "1.*", which I guess was to change the expression to float.:

```
xc=250 & yc=250. & r=185. & for i=yc-r , yc+r do print,floor(-sqrt(r^2-(i-yc)^2)+xc)
```

You might find it useful to put these values in an array, which can be done easily like this. (I think IDL 8.0 is needed to use the [start:end] syntax I use here):

```
xc=250 & yc=250. & r=185. & myResult = floor(-sqrt(r^2-([yc-r:yc+r]-yc)^2)+xc)
(running "PLOT, myResult" after this shows a very nice semicircle!)
```

Also, good job with presenting your question clearly, with all the important details! Not everyone has been as clear in the past few days. :-)

Cheers,
-Dick

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