

Section 004 of Calculus Lab 2,
Quiz of March 14, 2003
10:00-10:15 a.m.

Name (clearly printed): _____

Student Identification Number: _____

The first three digets of your Student Identification Number specify an integer. As your first Input statement to be evaluated, set `id` equal to the that integer. Thus, if your Student Identification Number were 123-45-6789, you would write and evaluate `id = 123` as your first line of Input. Then, your first Input and Output would look like

```
In[1]          id = 123
```

```
Out[1]         123
```

Throughout, write `t` in place of θ .

Problem 1. Have MATHEMATICA evaluate one at a time each of the six Input statements that are given in terms of typewriter characters by

```
<<Graphics'Graphics'
```

```
<<Miscellaneous'RealOnly'
```

```
h[t_] := t /; t >= 0           (*This should give h[3]=3*)
```

```
h[t_] := 0 /; t < 0           (*This should give h[-4]=0*)
```

```
f[t_] = id*h[ Sin[4*t] ]^(1/17) (*This should give f[Pi/8]=id*)
```

```
PolarPlot[ f[t], {t, 0, 2*Pi} ]
```

(where `'` appears on the key to the left of 1) and sketch the corresponding polar plot that MATHEMATICA gives as Output for the last Input.

Output:

Problem 2. Print a MATHEMATICA Input statement (in `InputForm`) as well as the corresponding Output statement for the purpose of using **NIntegrate** to find the area of any one of the four petals of the preceding polar curve.

Input:

Output: