

NAME :

1. Give the MATLAB commands to plot $r(t) = t \cos(t)$, for t from 0 to 2π .
(Notice that (r, t) are polar coordinates.)

2. As you may know, $\sqrt{\cdots \sqrt{\sqrt{2}}}$ converges to one.

(a) Complete the following m-file

```
function a = apply (f,x0,n)
%
% applies the function f n times starting at x0,
% e.g. apply(f,x0,0) returns x0
%      apply(f,x0,1) returns f(x0)
%      apply(f,x0,2) returns f(f(x0)), etc...
%
```

- (b) Give the MATLAB command (using `apply`) to compute $\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{2}}}}}$.

Also give the value MATLAB shows.

Alternative: On Monday 4/21, give the answers to 3.5.4,5; 4.7.2,4; and 5.4.5.