

assignment02.m

```
1  % SPDX-License-Identifier: GPL-3.0-or-later
2  %
3  % ECE210 assignment02.m -- A New Way of Thinking
4  % Copyright (C) 2024 Aidan Cusa <aidancusa@gmail.com>
5
6  clc;    % clear command window
7  clear; % clear all variables from current workspace
8  close all;
9
10 %% part 1
11 u = -4:2:4;
12 v = 0:(pi/4):pi; % could also use linspace(0, pi, 5) but meh
13
14 %% part 2
15 f = prod(1:10);
16
17 %% part 3
18
19 % part A
20 A = zeros(2, 4);
21 A(1, 1) = 1;
22 A(2, 3) = 1;
23
24 % part B
25 b = reshape(1:16, 2, [])'; % reshape 1-16 into two rows then transpose it to
26                             % become one even column and one odd column
27
28 B = reshape(b, [4, 4]);    % now reshape the two columns into a 4x4 matrix
29                             % will get desired result due to column major
30                             % ordering
31
32 %% part 4
33 n = 0:50;
34 t = linspace(-pi, pi, 1000);
35
36 a_n = (2 * n + 1)'; % transpose in order to make a_n into a column vector
37                  % so that it can be multiplied by t properly
38
39 s = sum(sin(a_n * t) ./ a_n); % element wise division for dimensions to
40                               % match up
41
42 plot(t, s)
```