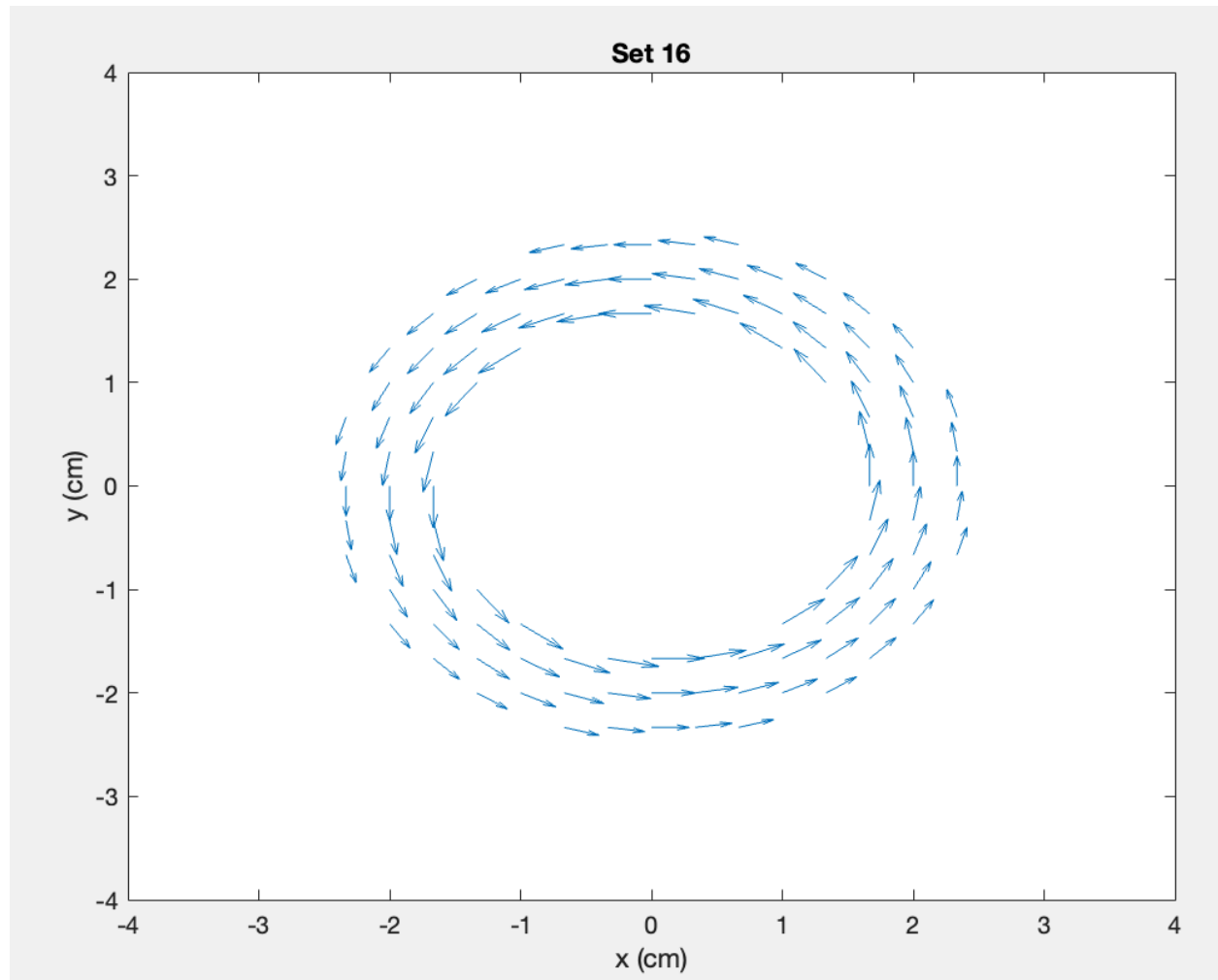**Assignment 7:**
Jenisha Thevarajah
Thevaj5

MATLAB GRAPH:

MATLAB CODE:

```
%Jenisha Thevarajah
%400473218

% Define toroid parameters
I_t = 5.0;
N_t = 200;
```

to Here
up to this line and pause

```
% number of points in each dimenstion to plot
nx = 25;
ny = 25;
XMinimum = −4;
XMaximum = 4;
YMinimum = −4;
YMaximum = 4;
dx = (XMaximum−XMinimum)/(nx−1);
dy = (YMaximum−YMinimum)/(ny−1);
[X, Y] = meshgrid(XMinimum:dx:XMaximum, YMinimum:dy:YMaximum);
Z = zeros(size(X));

% magnetic field at each point in observation plane
Bx = zeros(size(X));
By = zeros(size(X));
Bz = zeros(size(X));

% all of the points
for i = 1:numel(X)
    x = X(i);
    y = Y(i);
    r = sqrt(x^2 + y^2);



    if r >= r_i && r <= r_o
        B_Phi = (I_t*N_t)/(2*pi*r);
        Bx(i) = −B_Phi * sin(atan2(y, x));
        By(i) = B_Phi * cos(atan2(y, x));
    end
end


quiver(X, Y, Bx, By);
xlabel('x (cm)'); % Label x−axis
ylabel('y (cm)'); % Label y−axis

title('Set 16')
```