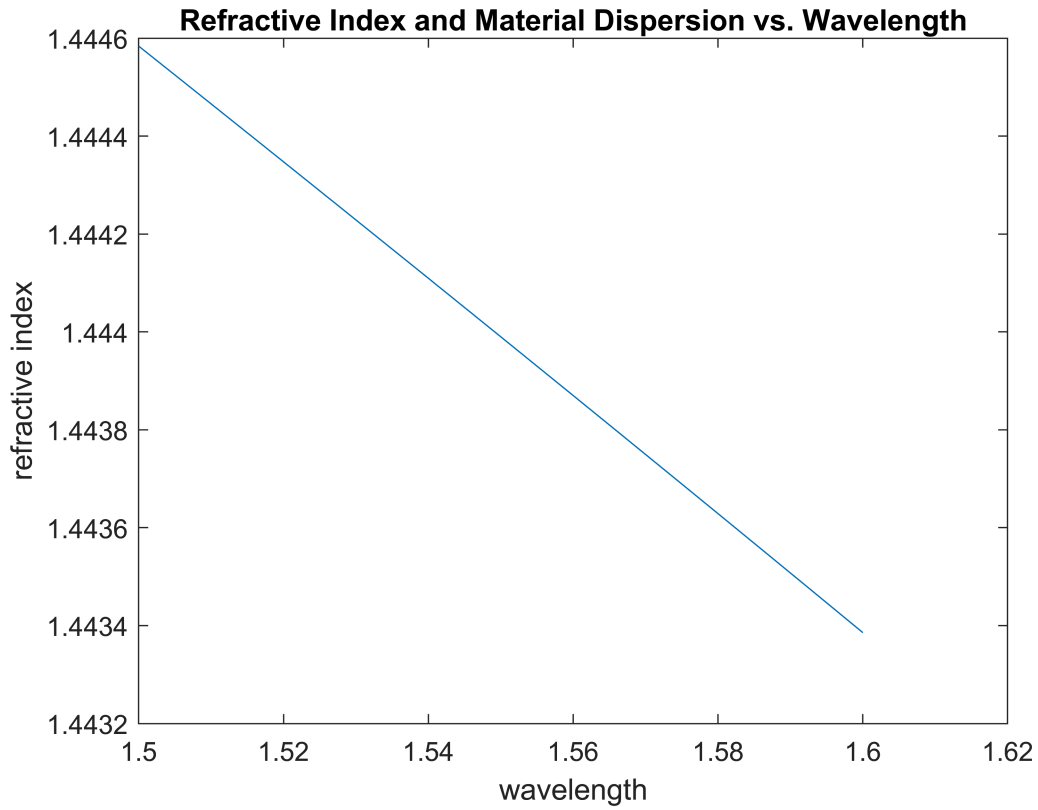
Part 1 - Plot of refractive index vs wavelength

```
% declare the Sellmeier constants
B1 = 0.696;
B2 = 0.408;
B3 = 0.897;

C1 = 4.679e-3;
C2 = 1.351e-2;
C3 = 97.934;

% use the linspace to get the range based off of the wavelength
% need to put the lambda values in micro meters for Sellmeier eqn.
lambda_o = linspace(1500e-3, 1600e-3, 1000)
```

```
lambda_o = 1×1000
    1.5000    1.5001    1.5002    1.5003    1.5004    1.5005    1.5006    1.5007 ···
```

```
% declare matrix for refractive index
n = zeros(size(lambda_o));

% use the sellmeier equation to get n
for i = 1:length(lambda_o)
    n(i) = sqrt(1 + (B1*lambda_o(i)^2)/(lambda_o(i)^2 - C1) + (B2*lambda_o(i)^2)/(lambda_o(i)^2
end

% plot the refractive index and material dispersion as a funct of wavelength below
plot(lambda_o, n)
xlabel('wavelength')
ylabel('refractive index')
title('Refractive Index and Material Dispersion vs. Wavelength')
```



Part 2 - Plot of waveguide dispersion vs wavelength

```
% set constants
delta = 0.003;
d = 2e-6;

% using the delta eqn from Q1 we get n2
n2 = n - delta*n;

% get V using the eqn from Q2
V = (pi.*d.*n2.*sqrt(n.^2 - n2.^2))/lambda_o;

% get b from given eqn
b = (0.5 - 0.1/V)^2;

% Couldnt figure out the rest :(
```