1. Given the nominal values and tolerances in table below, determine and record the corresponding color code bands:

Value	Band 1	Band 2	Band 3	Band 4	Band 5
27 @ 10%					
125 @ 1%					
2.7K @ 5%					
822K @ 1%					
1.5M @ 10%					
59M @ 20%					

2. Given the color codes in the table below, determine and record the nominal value, tolerance and minimum and maximum acceptable values:

Colors	Nominal	Tolerance	Minimum	Maximum
Red-red-black-silver				
Blue-gray-black-gold				
Brown-green-gray-red-red				
Red-violet-red-silver				
Gray-red-yellow-none				
Green-black-green-silver				

3. From the collection of your resistors, determine the minimum and maximum values based on the nominal value and tolerance. Record these values in the table below. Using a DMM, measure the actual value of the resistor and record it in the table below as well. Determine the percent deviation of the resistor based on the measured and nominal value and record it in the table. Circle the deviation if the resistor is out of tolerance. The equation for percent deviation is

$$\%Deviation = 100 \times \frac{|measured - nominal|}{nominal}$$

Resistor Color Bands	Nominal	Minimum	Maximum	Measured	Deviation

Resistor Color Bands	Nominal	Minimum	Maximum	Measured	Deviation

4. From the collection of items in the lab project, measure the length and diameter of each item, calculate each item's resistance and record the values in the table below. Measure each item's resistance and compare to your calculated value in the table below.

Item	Length	Diameter	Area	ρ	Calculated	Measured