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Step 1

1 of 2



Result

2 of 2

$$\Delta = \frac{(64n)^2 R^3}{1296 G}$$

Using more wires, my calculated is the same as the other 12.7%, the other person got
 other things at great results. It has a range of highest and low values.

$$J = \frac{\pi}{32} (d^4)$$

Below you can see the results of the experiment.

Using the graph of the data, we have:

$$G = \frac{17.5}{10.2}$$

where:

T = Torque of the spring

J = Polar moment of inertia

G = modulus of rigidity

L = distance of the shaft

$$F(x) = \frac{F_0}{2nL}$$

$$F(x) = \frac{(F_0/L)}{2n \left(\frac{2\pi R^2}{n} \right)}$$

$$F(x) = \frac{(F_0/L)}{\left(\frac{4\pi R^2}{n} \right)}$$

$$F(x) = \frac{(nF_0/L)}{4\pi R^2}$$

Let's also, $L = n(2\pi R)$

Substitute the helix for L .

$$F(x) = \frac{(nF_0/L)(2\pi R)}{4\pi R^2}$$

$$F(x) = \frac{(2\pi nF_0^2 R)}{4\pi R^2}$$