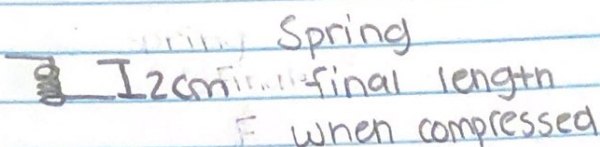
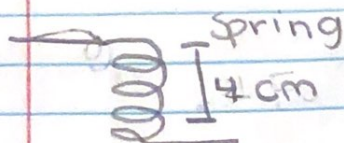
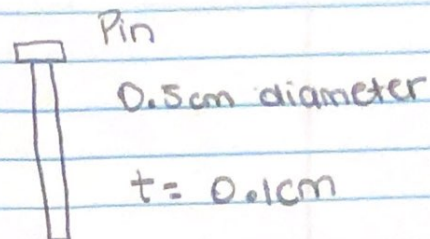
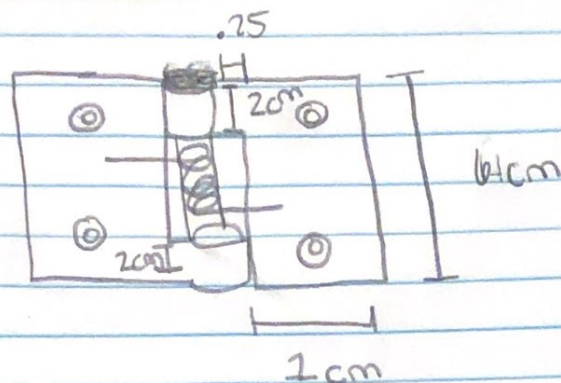


Calculations



Hooke's Law

$$F_s = -kx$$

Δx = Final length of spring - original length

k = ? (spring constant)

F_s = force acting on spring

$$F_s = 120 \text{ N}$$

$$120 \text{ N} = -k(2 - 4)$$

$$\frac{120}{2} = \frac{2k}{2}$$

$$k = 60$$

Bearing Stress on pin/leaves ?

$$\sigma_B = \frac{F}{A}$$

$$F = 130 \text{ N}$$

$$A = n\pi r^2 \text{ (cross-sectional area)}$$

F = internal force

$$\text{Pin} = \frac{130}{n\pi(0.25)^2} = 662.08 \text{ N/cm}^2$$



$$A = (n)(0.25)^2$$

$$A = 1 \times 6 = 6 + 0.25 \times 2 = 6.5$$

$$\text{Leaf} = \frac{130}{6.5} = 20.2 \text{ MPa}$$

$$6.62 \text{ MPa}$$