Question 1

In a hydraulic system, a 6kN force is exerted over a 50 cm stroke length at the input piston. A 950N force is measured at the output over the 300cm stroke length. Based on these measurements, what is the efficiency of the hydraulic system?

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$$\eta = \frac{W_{out}}{W_{in}} \qquad\qquad W = (F)(d)$$

$$\eta = \frac{(950N)(3m)}{(6000 N)(.5m)} = .95$$

$$\boxed{\eta = 95\%}$$