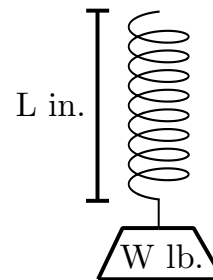


5. [7 points] The UM Weights and Measures Club is building a spring scale, which weighs objects by hanging them from a spring.

Let W be the weight of an object, in pounds, and let L be the length of the spring in inches when we hang that object from it. It turns out that there is a linear relationship between W and L . The club observes that their spring is 3 inches long when no weight is attached, and stretches out to 5.5 inches when they test it with a 5-pound weight.



- a. [3 points] What is the slope of the function $W = f(L)$? Explain the meaning of the slope's value in the context of the problem.

Slope = _____

Meaning:

- b. [2 points] Find a formula for $W = f(L)$.

$W =$ _____

- c. [2 points] Suppose we hang a bucket from the spring and then pour in some water. As we add the weight of the water, the spring gets 4 inches longer. How much does the added water weigh? *Include units.*

The water in the bucket weighs _____