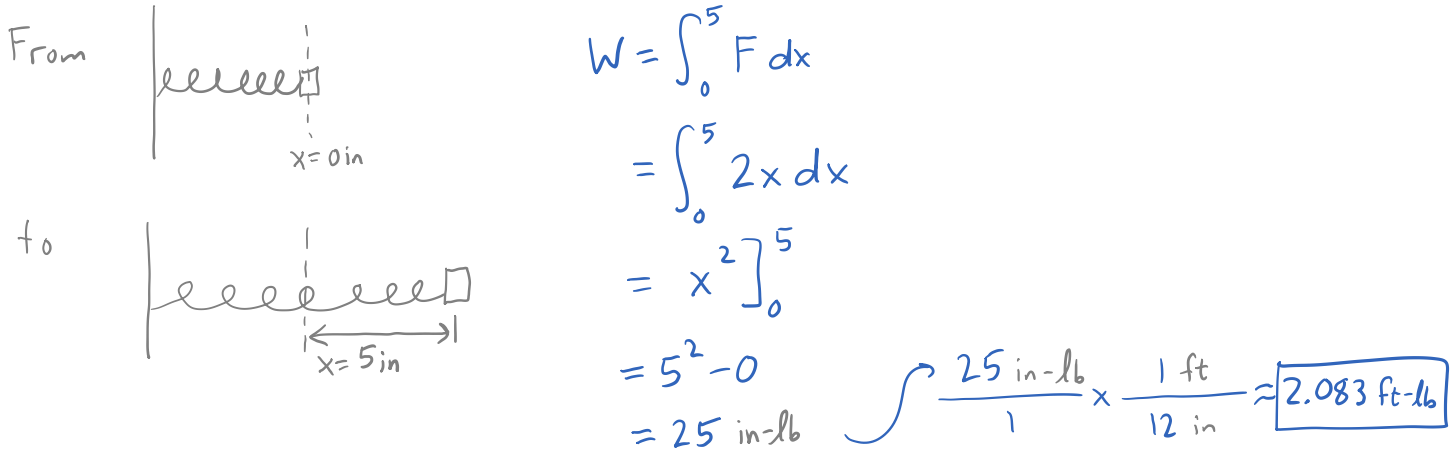
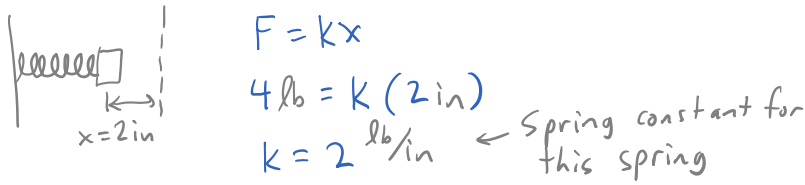


1. A force of 4 lb is required to hold a spring compressed 2 in. beyond its natural length. How much work is done in stretching the spring from its natural length to 5 in. beyond its natural length?



2. A rope with density 0.2 kg/m is hanging over the edge of building 61 so the end touches the ground. At the end of the rope, you attach a 5-kg tray and put in a 10-kg Calculus book. Assuming that building 61 is 30 m high, find the work done in pulling the rope, tray, and book up to the top of the building.

② Rope:

① Tray:  $W = Fd = (5 \text{ kg})(9.8 \text{ m/s}^2)(30 \text{ m}) = 1470 \text{ J}$

② Book:  $W = Fd = (10 \text{ kg})(9.8 \text{ m/s}^2)(30 \text{ m}) = 2940 \text{ J}$

④ Total work =  $1470 + 2940 + 882 = 5292 \text{ J}$

Q: What five-letter word becomes shorter when you add two letters to it?