Answer on Question #46421 – Physics – Other

Question.

A string of natural length L extends to a new length L' under tensile force F. If Hooke's law applies, the work done in stretching the spring is?

Solution.

Be definition the work done W is:

$$W = \int F dl$$

In our case, the force F is constant. Therefore,

$$W = \int F dl = F \int_{L}^{L'} dl = F(L' - L)$$

Answer

$W = F(L' - L)$