*6–12* A string of length $L$, which is clamped at both ends and has a tension $T$, is pulled aside a distance $h$ at its center and released.

(a) What is the energy of the subsequent oscillations?

(b) How often will the shape shown in the figure reappear? (Assume that the tension remains unchanged by the small increase of length caused by the transverse displacements.) [*Hint*: In part (a), consider the work done against the tension in giving the string its initial deformation.]