4 A spring is suspended from a fixed point at one end and a vertical force is applied to the other end, as shown in Fig. 4.1.

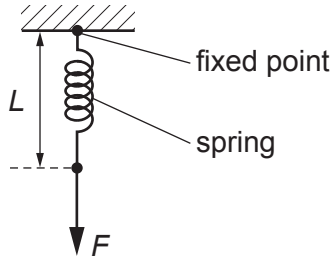

Fig. 4.1

The variation of the applied force *F* with the length *L* of the spring is shown in Fig. 4.2.

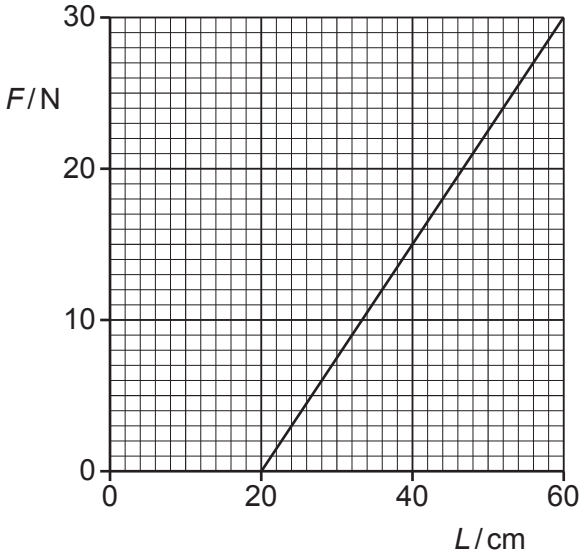

Fig. 4.2

(a) Determine the spring constant *k* of the spring.

k = ... $N\,m^{-1}$ [2]

(b) Determine the elastic potential energy in the spring when the applied force F is 15 N.

elastic potential energy = ... J [3]

[Total: 5]