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.
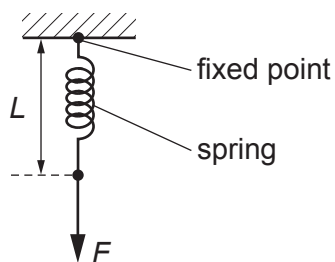

Fig. 4.1

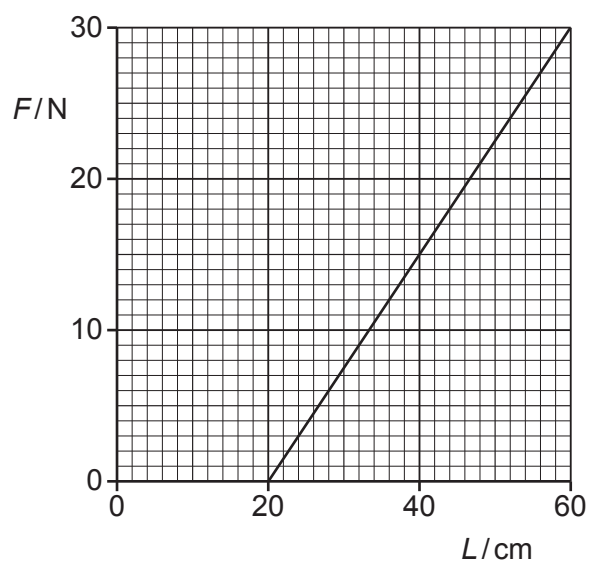The variation of the applied force F with the length L of the spring is shown in Fig. 4.2.

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]