3 Fig. 3.1 shows a block of mass 0.30 kg released from rest at a height of 0.10 m above a light spring of force constant 80 N m^{-1}. The block lands on the light board and compresses the spring before rebounding.

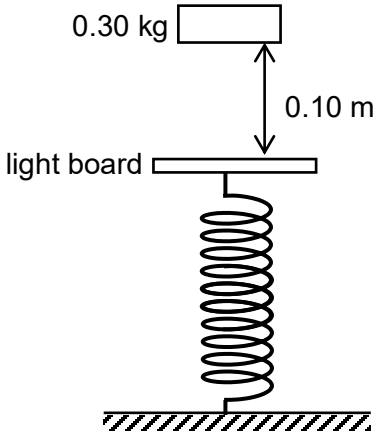

Fig. 3.1

(a) Calculate the maximum compression of the spring.

maximum compression = ……. m [2]

(b) Determine the maximum kinetic energy attained by the block before it comes to a momentary stop.

maximum kinetic energy = …….. J [3]

(c) On Fig. 3.2 below, sketch the graphs of kinetic energy (label this KE), gravitational potential energy (label this GPE) and elastic potential energy (label this EPE) with respect to position of the mass.

Take the gravitational potential energy at the maximum compression to be zero.

There is no need to indicate numerical values.

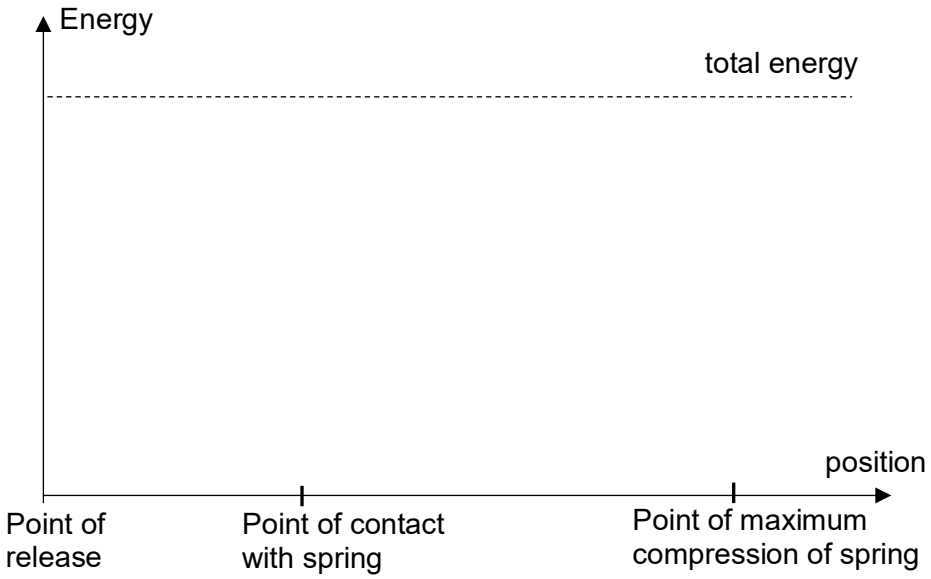

Fig. 3.2

[3]

[Total: 8]