WebAssign
CH07-HW01-SP12 (Homework)

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PHYS 172-SPRING 2012, Spring 2012
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Current Score : 7 / 7 **Due :** Thursday, February 23 2012 11:59 PM EST

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1. 1/1 points | Previous Answers MI3 7.1.X.025

A spring whose stiffness is 1010 N/m has a relaxed length of 0.47 m. If the length of the spring changes from 0.31 m to 0.82 m, what is the change in the potential energy of the spring?

ΔU = 48.935 ✓ J

- *Read the eBook*
- Section 7.1

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2. 1/1 points | Previous Answers MI3 7.1.X.022

A spring has a relaxed length of 6 cm and a stiffness of 50 N/m. How much work must you do to change its length from 11 cm to 16 cm?

0.1875 ✓ N·m

- *Read the eBook*
- Section 7.1

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3. 1/1 points | Previous Answers MI3 7.1.X.002

A horizontal spring with stiffness 0.3 N/m has a relaxed length of 15 cm (0.15 m). A mass of 16 grams (0.016 kg) is attached and you stretch the spring to a total length of 26 cm (0.26 m). The mass is then released from rest. What is the speed of the mass at the moment when the spring returns to its relaxed length of 15 cm (0.15 m)?

v = 0.47631 ✓ m/s

- *Read the eBook*
- Section 7.1

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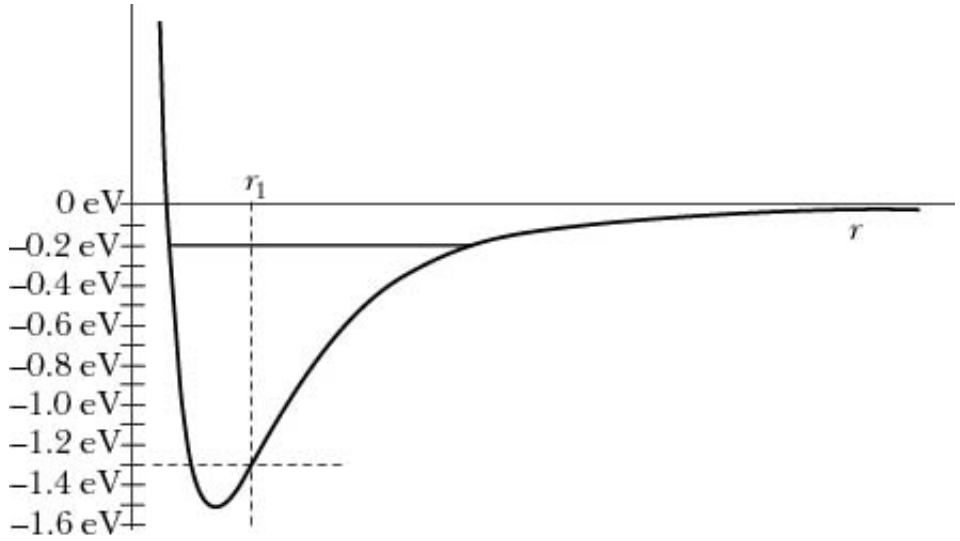
4. 4/4 points | Previous Answers MI3 7.2.P.032

The figure shows a potential energy curve for the interaction of two neutral atoms. The two-atom system is in a vibrational state indicated by the heavy solid horizontal line.



(a) At $r = r_1$, what are the approximate values of the kinetic energy K, the potential energy U, and the quantity $K+U$?

K = 1.1 ✔ eV

U = -1.3 ✔ eV

$K+U$ = -0.2 ✔ eV

(b) What minimum (positive) amount of energy must be supplied to cause these two atoms to separate?

0.2 ✔ eV

- *Read the eBook*
- Section 7.2