Physics
Quiz # 11

Tian Xiaoyang
26001904581

P1.
(a)

P2.
(d)

P3.
(a)

P4.

P5.
a).
$l_a = \sqrt{3^2 + 4^2} = 5m$
$dl = l_a - l_o = 1m$
$U = \frac{1}{2} k \Delta x^2$
$1^2 \times 10 \times \frac{1}{2} = 5J$

b).
$l_a = \sqrt{6^2 + 8^2} = 10m$
$dl = l_a - l_o = 6m$
$U = \frac{1}{2} k \Delta x^2$
$6^2 \times 10 \times \frac{1}{2} = 180J$

c).

$l_a = 5m$

$dl = l_a - l_o = 1m$

$U = \frac{1}{2} k\Delta x^2$

$1^2 \times 10 \times \frac{1}{2} = 5J$

P6.

$U_G = 2 \times 9.81 \times 1$

$= 19.62J$

the bead stops at position B; therefore, the velocity is zero, and the kinetic energy also becomes zero, all gravitational potential energy has converted into elastic potential energy.

$l_o = \sqrt{1^2 + 1^2} = \sqrt{2}m$

$l_B = 2m$

$dl = l_B - l_o = 0.586m$

$U = \frac{1}{2} k\Delta x^2$

$0.586^2 k \times \frac{1}{2} = 19.62J$

$k = 114.27N/m$