Balls of Potential Energy

Given the information below, calculate the gravitational potential energy stored in each system from your lab. Be sure to use proper units and convert SI measures when necessary. Remember, to use this formula, mass must be in kilograms and height must be in meters. Show your work. The first one has been done for you.

Mass of **BOUNCY** ball: 37.2g = _____kg

Mass of **TENNIS** ball: 55.5g = _____kg

Mass of **PING PONG** ball: 26.4g = _____kg

Acceleration due to gravity on earth:

_____

1. How much Potential Energy did the *bouncy ball* have when held at a height of *30 cm*?

$PE_{grav}=mgh$

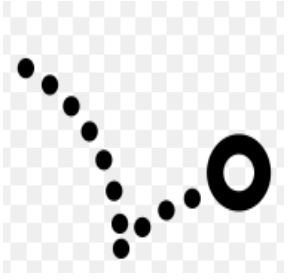
$m= .0372$ kg

$g= 9.8$ m/s^2

$h= .30$ m $\therefore PE_{grav}= (.0372)(9.8)(.30)=$ .109368 J

2. How much Potential Energy did the *bouncy ball* have when held at a height of *50 cm*?

3. How much Potential Energy did the *bouncy ball* have when held at a height of *100 cm*?



4. How much Potential Energy did the *tennis ball* have when held at a height of *30 cm*?

5. How much Potential Energy did the *tennis ball* have when held at a height of *50 cm*?

6. How much Potential Energy did the *tennis ball* have when held at a height of *100 cm*?

7. How much Potential Energy did the *ping pong ball* have when held at a height of *30 cm*?

8. How much Potential Energy did the *ping pong ball* have when held at a height of *50 cm*?

9. How much Potential Energy did the *ping pong ball* have when held at a height of *100 cm*?