Mechanics 3

1. In the castle Devín close to Bratislava is an excavated deep well. Tourists have the possibility to estimate its depth by means of empting a cup of water and counting the time of its free fall in the well. What is the approximate depth of the well, when the time was estimated as 3.3 seconds?

2. The body was thrown up with initial speed $v_0 = 30$ m·s^{-1}. What was the maximum height reached by body, how long it took to get in max. height and what was total time until the body returns to original position?

3. What is the length of the mathematical pendulum, when its period is 4.5 seconds?

4. There is a pendulum placed in elevator. It has period $T_1 = 1$ s. The elevator starts to move upwards with constant acceleration and the period is changed to $T_1 = 1.2$ s. What is the acceleration of elevator?

HW. An object was thrown up. What was the initial speed and maximum height if it fell to original position 25 seconds after the throw.