Answer on Question #48894 – Physics - Mechanics | Kinematics | Dynamics

The starting height for a frictionless coaster on earth is 25 m. It's mass with 2 passengers is 300 kg. calculate the maximum GPE

Solution:
$h = 25m - initial\ height;$
$m - mass\ of\ the\ coaster$

Maximum GPE is where the height is maximum. Formula for the gravitational potential energy:

$$GPE = mgh = 300kg \cdot 9.8\frac{N}{kg} \cdot 25m = 73500 = 73.5\ kJ$$

Answer: maximum GPE is equal to $73.5\ kJ$