

Physics 111 Session 10

- 1) Find the height of a cliff if it takes a 1 kg object 15.2 seconds to reach the ground when dropped.

- 2) How much work was done by gravity in question 1?

- 3) After Hurricane Irma, A 4.50-g pen is found stuck 3.5 cm into a wall. If the average force of the pen on the tree was 75N, find the pen's velocity as it struck the wall.

- 4) A cart with mass 6.80 kg was pulled over a distance of 4.55 m in the positive x direction.
 - a) How much work was done on the cart if the force acting on it was $F = (4.35 \text{ N})x + (2.65 \text{ N})y$?
 - b) How much work was done on the cart if the force acting on it was $F = (6.20 \text{ N})x + (1.20\text{N})y$?
 - c) If the mass of the cart is increased, does it change the work done in parts (a) and (b)?

- 5) A formula 1 car weighs 725 kg and can go from 0-100 km/h in 2.5 seconds. Find the power output of the engine.