Name:
Grade: 8
Physics worksheet

Question one *Mechanical Energy*

The Olympic downhill ski run has a maximum height h=200m.

A skier of mass m=70Kg goes down this ski run.

Let g=10N/Kg

Part A: At the top (point A)

1)Calculate the gravitational potential energy of the skier at the top A of the run

2)The skier starts off without initial speed. Its kinetic energy at point A is zero. Why

3)Calculate the mechanical energy at point A.

Part B: The skier arrives at B with a speed 40m/s.

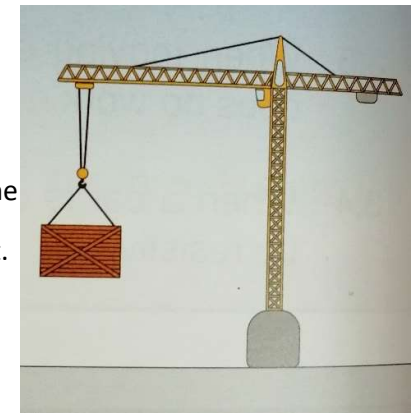
4)Calculate the kinetic energy of the skier at point B.

5)Calculate the gravitational potential energy of the skier at point B.

6)Deduce the mechanical energy.

Question two: *Power supplied by a crane*

A crane takes 18s to lift a load of mass m=200Kg, a length l=20m. the upward motion of the load is uniform rectilinear.



1)Calculate the magnitude of the weight of the load. Let g=10N/Kg.

2)Calculate the work done by the crane's engine, given that the engine exerts a force of a magnitude equal to that of a weight.

3)Calculate the power supplied by the crane.