Mechanical work, energy and performance

- 1. A car with mass 1, 2t moves with a constant acceleration of $15 m.s^{-2}$. Calculate what work the car's engine will do on a 600 m if we neglect the friction between the road and the wheels of the car.
- 2. A stone weighing 60 m falls from a 60 m high tower. Definitely the kinetic and potential energy of the stone at the end of the 3 second of its free fall.
- 3. The roof of the cottage was damaged by a stone weighing 30 kg, which originally hung over the cottage in the amount of 20 m. Calculate the speed at which the stone hit the roof of the cottage. Use Energy conservation law.
- 4. Determine the performance of a person who has lifted using a fixed pulley a cement bag weighing 50 kg to a height of 1, 5 m for 7, 5 s with a uniform motion.
- 5. The tractor moves at a speed of $2,88 \, km.h^{-1}$ and has an performance of $110 \, kW$. How much force does it influence on the plow?