Answer on Question #49063, Engineering, Other

A car of mass 1000 kg is cruising at 120 km/hr. At this velocity the drag and friction forces that the engine needs to work against is equivalent to 450 N.

Calculate the propulsive power delivered at the wheels when the car is cruising at 120 km/hr. Give your answer in Watts

By the definition, the power is:

$$P = \frac{W}{t} = \frac{FS}{t} = Fv$$

Therefore, the propulsive power delivered at the wheels when the car is cruising at 120 km/hr is:

$$P = 450N \cdot \frac{120}{3.6}\frac{m}{s} = 15000W$$

Answer: $P = 15000W$