Answer on Question #67042- Physics / Mechanics -Relativity

A car traveling at 30 m/s overcomes a frictional resistance of 100N while moving. Calculate the power developed by the engine. [1 hp = 0.75Kw] (a) 0.23hp (b) 0.40hp (c) 4.00hp (d) 4.40hp

Solution

The power developed by the engine

$$P = \frac{\text{work done}}{\text{time}}$$

$$= \frac{A}{t} = \frac{Fs}{t} = Fv$$

$$= 100\ \text{N} \times 30\ \frac{\text{m}}{\text{s}} = 3000\ \text{W} = 4.00\ \text{hp}$$

Answer: (c) $P = 4.00$ hp