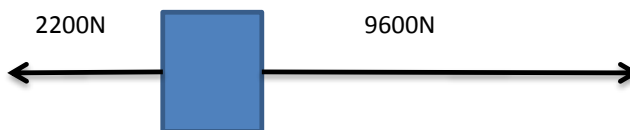# Answer on Question#37574, Physics, Other

Question:

The engine of a vehicle moves it forward with a force of 9600N against a relative force of 2200N. If the mass of the vehicle is 3400kg, find the acceleration produced.

Answer:

Newton's second law of motion can be expressed in equation form as follows:

$$\sum \vec{F} = m\vec{a}$$

Net force equals:

$$F_N = 9600N - 2200N = 7400N$$

Therefore acceleration equals:

$$a = \frac{7400N}{3400kg} = 2.2\frac{m}{s^2}$$

Answer: $2.2\frac{m}{s^2}$