

CW  
3.7.21

## ASSIGNMENT

Q.1. How much net force is required to accelerate a 1000 kg car at  $4.00 \text{ m/s}^2$ ?

Ans - Mass = 1000 kg  
Acceleration = ~~4/m~~  $4 \text{ m/s}^2$

Force = mass  $\times$  acceleration

$$\Rightarrow F = 1000 \times 4 \\ = \underline{4000 \text{ N}}$$

Q.2. A driver accelerates his car first at the rate of  $4 \text{ m/s}^2$  & then at the rate of  $8 \text{ m/s}^2$ . Calculate the ratio of the forces exerted by the engine?

Ans -  $F_1 = ma_1$

$$F_2 = ma_2$$

$$\frac{F_1}{F_2} = \frac{ma_1}{ma_2}$$

$$\Rightarrow \frac{F_1}{F_2} = \frac{a_1}{a_2} \Rightarrow \frac{F_1}{F_2} = \frac{4}{8} = \underline{1:2}$$