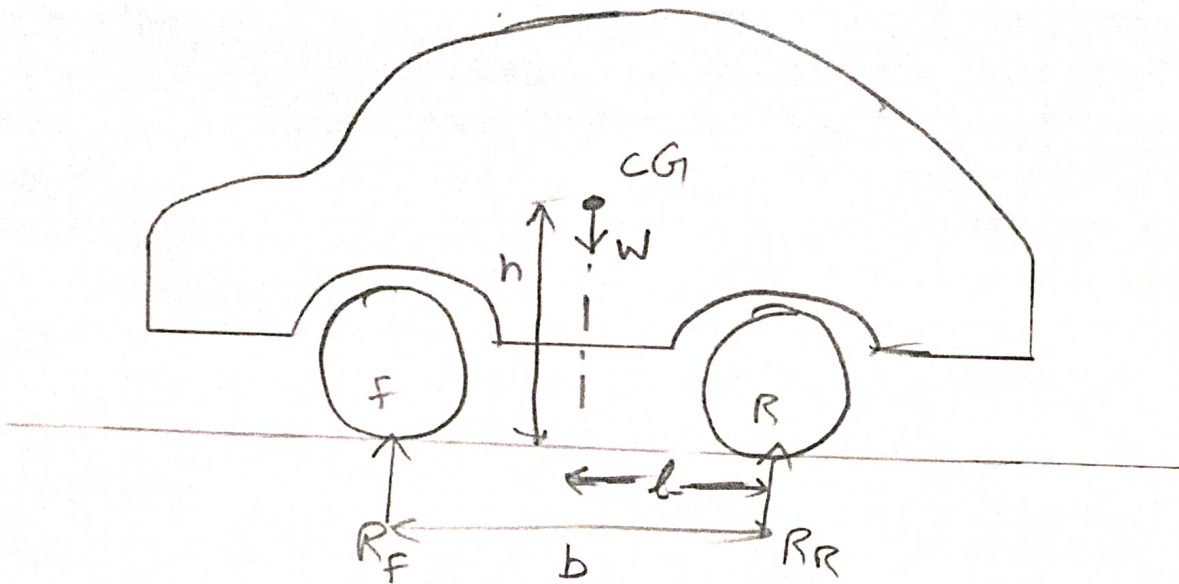


Load distribution for four wheels



Forces acting on the four wheeled vehicle at rest are shown in the diagram.

In this case only three independent equations can be formed to take care of four unknown, four reaction in the wheel. Thus the problem is simplified by considering it as a two wheeled vehicle. i.e., the reaction on both rear wheels are equal and also on both front wheel.

Let R_F and R_R be vertical reaction at front and rear wheel respectively

Considering

$$\sum V = 0$$

$$W = R_F + R_R \rightarrow \textcircled{1}$$

$$\sum M_R = 0$$

$$Wl = R_F b$$

$$R_F = \frac{Wl}{b}$$

Sub R_F in $\textcircled{1}$

$$W = \frac{Wl}{b} + R_R$$

$$R_R = W - \frac{Wl}{b}$$

$$R_R = W \left[1 - \frac{l}{b} \right]$$