EE3900 Assignment - 1

Adhvik Mani Sai Murarisetty - AI20BTECH11015

Download latex-tikz codes from

https://github.com/adhvik24/EE3900/blob/main/
Assignment_1/Final_Assignment_1.tex

1 QUESTION 2.17.A

Give the magnitude and direction of the net force acting on a stone of mass 0.1 kg,just after it is dropped from the window of a stationary train. Neglect air resistance.

2 SOLUTION

As the train is stationary, the only force acting on the mass is gravitational force which acts in the downward direction.

The direction of net force is $\begin{pmatrix} 0 \\ -1 \\ 0 \end{pmatrix}$.

And let the magnitude of net force is F.
Then,

$$F = m * g$$
$$= 0.1 * 10$$
$$F = 1$$

∴ Magnitude of net force is 1N.
$\left(Taking, \ g = 10ms^{-2} \right)$