

Dimensional analysis – A2 Further Mathematics Mechanics

1. June/2022/Paper_7367/03M/No.4

(a) State the dimensions of force.

[1 mark]

(b) The velocity of an object in a circular orbit can be calculated using the formula

$$v = G^a m^b r^c$$

where:

 G = Universal constant of gravitation in $\text{N m}^2 \text{kg}^{-2}$ m = Mass of the Earth in kg r = Radius of the orbit in metresUse dimensional analysis to find the values of a , b and c

[4 marks]
