

BA SANGAM COLLEGE
YEAR 11
PHYSICS
WORKSHEET 5

1. Complete the table of fundamental quantities and their SI units

Table 1 showing the seven (7) Fundamental Quantities of the International System of Units.

Fundamental Quantity		S.I. Unit	
Name	Symbol	Name	Symbol
Mass	m	kilogram	kg
Length	l	metre	m
Time	t	second	s
Current	I	ampere	A
Temperature		kelvin	K
Amount of Substance	n	mole	mol
Luminous Intensity	Iv	candela	c

2. Write a physical quantity which is equivalent to kgm/s^2

Derive from Newtons Second Law formula

3. State two scalar quantities.

4. State two vector quantities.

Hint:
Scalar-magnitude only
Vector- magnitude and direction

1. If a man walks 17 m West and then 15 m East, what is the magnitude of the man's total displacement?

2. A trolley travelling at 2 m/s attains a speed of 6 m/s in 2s. What is its' acceleration?

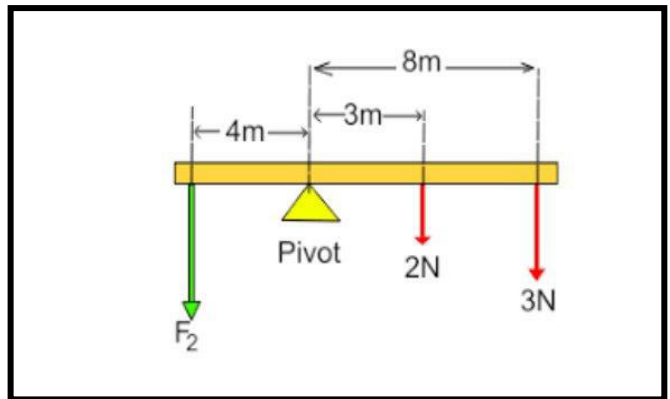
Given $V_i = 2\text{m/s}$, $V_f = 6\text{m/s}$ and $t = 2\text{s}$, Find a.

7. A cyclist travelling at 3.5 m/s decelerates at 0.5m/s^2 .

i) How long does he take to come to rest?

ii) How far does he travel while coming to rest?

8. A beam of negligible mass is balanced by the forces shown below.



- i) State the principle of moments
- ii) Find the force, F_2 required to balance the beam.

9. A truck of mass 1000 kg moving at 5 m/s collides with another truck of mass 1500 kg moving in the same direction at 3 m/s. If both of them couple together after collision, what will be their common velocity, v ?

Use the law of conservation of momentum

$$\text{Formula: } m_1v_1 + m_2v_2 = (m_1 + m_2) v$$