Physics IX Cheat Sheet

by Ayesha Talib via cheatography.com/173447/cs/36442/

MOTION

displacement	m
distance	m
speed	m/s
velocity	m/s
aceleration	m/s^2

speed (v) = s/t
average speed = total s/total t
velocity = d/t
average velocity = total d/total t
acceleration = v-u/t
v = 2πr/t
v = u+at
$s = ut+1/2at^2$
$v^2 = u^2+2as$

Distance-Time Graphs

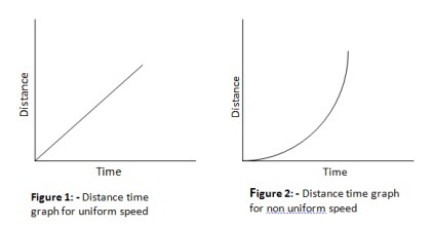

Figure 1: - Distance time graph for uniform speed

Figure 2: - Distance time graph for non uniform speed

Distance-Time Graphs

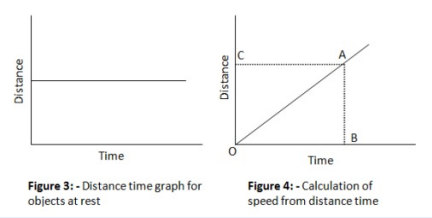

Figure 3: - Distance time graph for objects at rest

Figure 4: - Calculation of speed from distance time

Velocity-Time Graphs

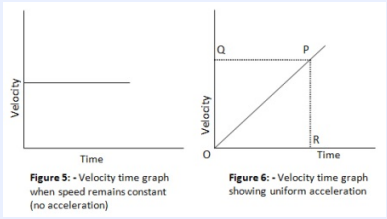

Figure 5: - Velocity time graph when speed remains constant (no acceleration)

Figure 6: - Velocity time graph showing uniform acceleration

FORCE AND LAWS OF MOTION

inertia	kg
force	kgm/s^2 or N
momentum	kgm/s
mass	kg

F = ma
p = mv
change in momentum = mv-mu
m1v1+m2v2=(m1m2)v

GRAVITATION

weight	N
mass	kg
pressure	Pa or N/m^2
acceleration due to gravity	m/s^2
density	g/cm^3

$F = GMm/d^2$
$g = GM/R^2$
W = mg
Wm = 1/6 We
(thrust) F = mg
Weight-upthrust = m
W = m+upthrust
$h = 1/2gt^2$
$v^2 = 2gh$
v = gt

WORK AND ENERGY

work	J
energy	J
power	W

work = Fs
Ep = mgh
$Ek = 1/2mv^2$
power = W/t /// power = E/t
average power = total E/total t

SOUND

wavelength	m
frequency	Hz
time period	s
loudness	dB
intensity	W/m^2

Nu = 1/T
v = λ/T
v = Nuλ

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