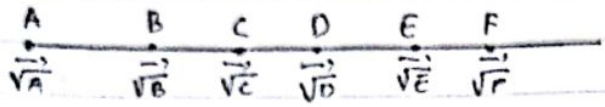
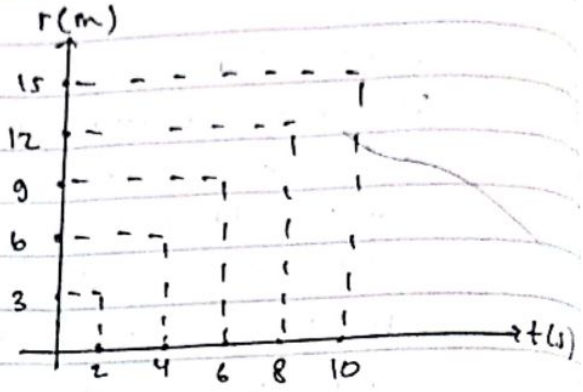
Nama : Neo Saftin
NPM : 2013022006

A. Gerak Lurus Beraturan (GLB)



Vektor Posisi	Waktu tempuh
$\vec{r}_A = 0$	0
$\vec{r}_B = 3i$	2
$\vec{r}_C = 6i$	4
$\vec{r}_D = 9i$	6
$\vec{r}_E = 12i$	8
$\vec{r}_F = 15i$	10

Grafik Posisi terhadap waktu

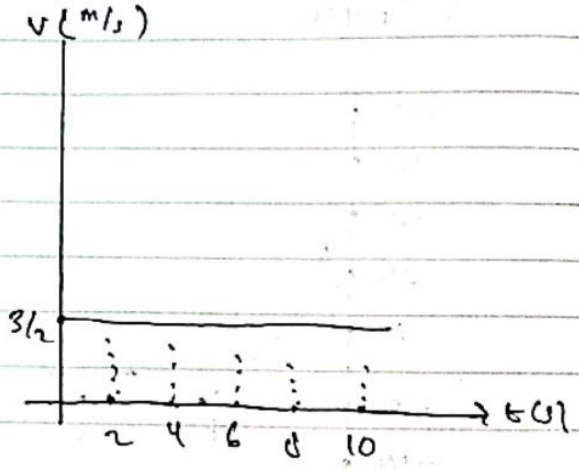


$r_B = r_t + V \cdot t$
$3 = 0 + V \cdot 2$
$V = 3/2$

Persamaan Posisi: $r = r_0 + V \cdot t$; $x_t = V_x \cdot t$

Waktu tempuh	Vektor Posisi	Kecepatan
0	$\vec{r}_A = 0$	0
2	$\vec{r}_B = 3i$	$3/2$
4	$\vec{r}_C = 6i$	$3/2$
6	$\vec{r}_D = 9i$	$3/2$
8	$\vec{r}_E = 12i$	$3/2$
10	$\vec{r}_F = 15i$	$3/2$

Grafik kecepatan terhadap waktu



Persamaan kecepatan $V_t = \frac{dx_t}{dt}$ = konstan

contoh : $V_B = 3/2$ m/s , $V_C = 6/4 = 3/2$ m/s

Persamaan Percepatan $a = \frac{\Delta v}{\Delta t} = \frac{V_2 - V_1}{t_2 - t_1} = 0$

Contoh : $a = \frac{3/2 - 3/2}{4 - 2}$

$= 0 \text{ m/s}^2$

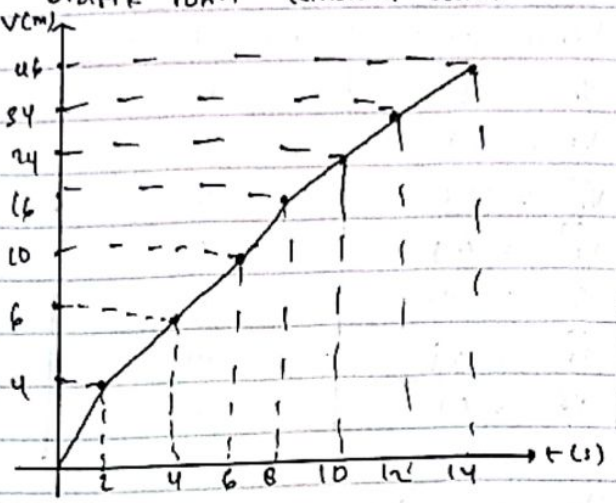
No.

Date :

B. Gerak Lurus Berubah Beraturan (GLBB)

Vector posisi	waktu tempuh
$\vec{r_A} = 0$	0
$\vec{r_B} = 4i$	2
$\vec{r_C} = 6i$	4
$\vec{r_D} = 10i$	6
$\vec{r_E} = 16i$	8
$\vec{r_F} = 24i$	10
$\vec{r_G} = 34i$	12
$\vec{r_H} = 46i$	14

Grafik posisi terhadap waktu



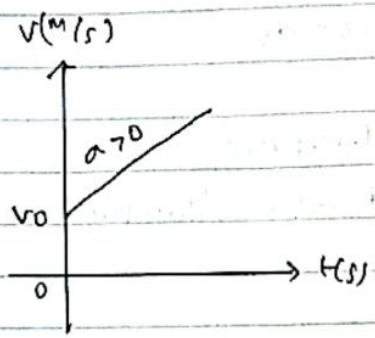
Persamaan posisi :

$x_t = x_0 + ct^2$

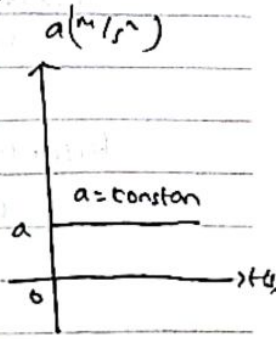
C = konstanta terganung pada benda dan waktu

Persamaan kecepatan benda

$v_t = v_0 + at$



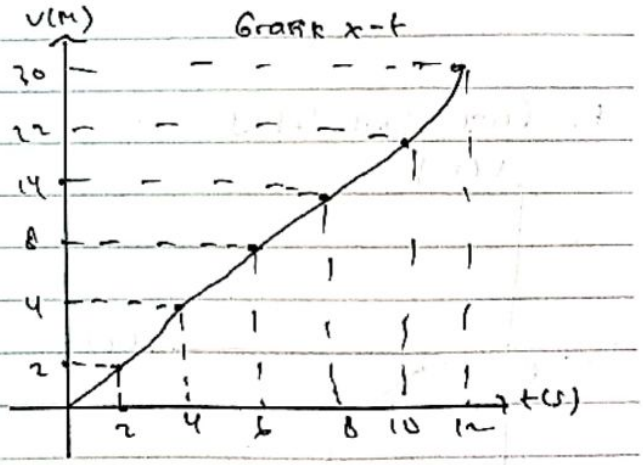
Grafik v-t



Grafik a-t

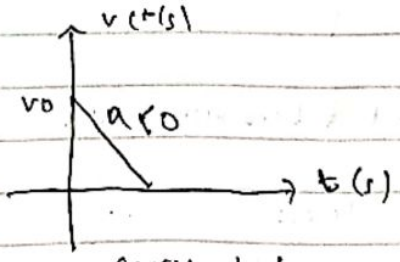
Persamaan percepatan benda

a = konstan



C. Gerak Vertikal ke atas

Vector posisi	waktu tempuh
$\vec{r_A} = 0$	0
$\vec{r_B} = 2j$	2
$\vec{r_C} = 4j$	4
$\vec{r_D} = 6j$	6
$\vec{r_E} = 14j$	8
$\vec{r_F} = 22j$	10
$\vec{r_G} = 30j$	12



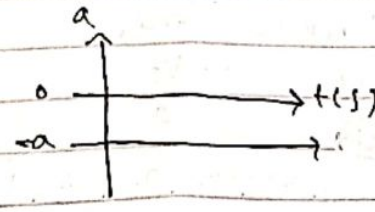
Grafik v-t

Persamaan kecepatan

$v_t = v_0 - at$

Persamaan percepatan benda

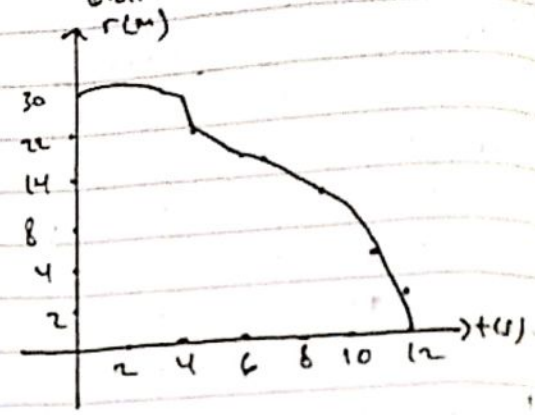
a = konstan diperlambat



D. Gerak vertikal ke bawah

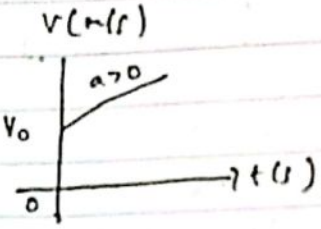
Vektor posisi	waktu tempuh
$\vec{r_A} = 30j$	0
$\vec{r_B} = 22j$	2
$\vec{r_C} = 14j$	4
$\vec{r_D} = 8j$	6
$\vec{r_E} = 4j$	8
$\vec{r_F} = 2j$	10
$\vec{r_G} = 0j$	12

Grafik posisi terhadap waktu



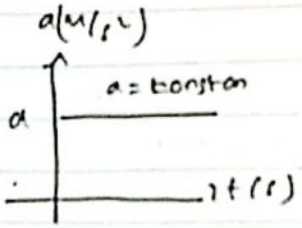
Persamaan kecepatan

$v_t = v_0 + at$



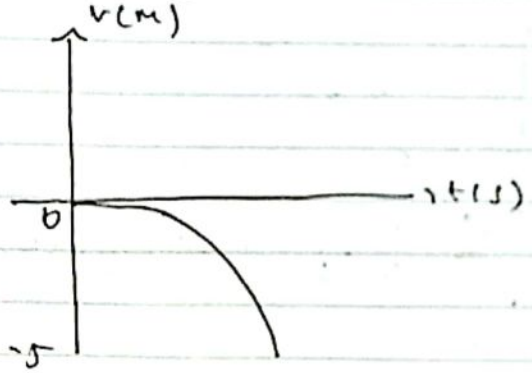
Persamaan Percepatan

a = konstan dipercepat



Grafik a-t

E. Gerak jatuh bebas



Grafik s-t = berbalik arah

Vektor posisi	waktu tempuh
$\vec{r_A} = 30j$	0
$\vec{r_B} = 22j$	2
$\vec{r_C} = 14j$	4
$\vec{r_D} = 8j$	6
$\vec{r_E} = 4j$	8
$\vec{r_F} = 2j$	10
$\vec{r_G} = 0j$	12

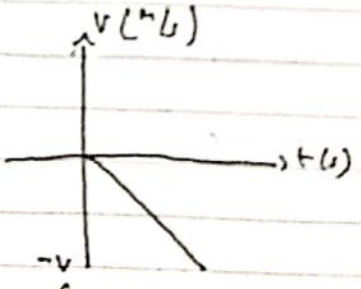
Persamaan posisi

$y = y_0 + ct^2$

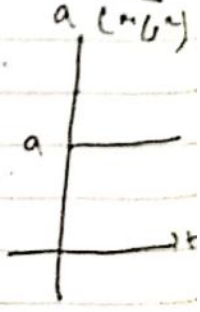
Persamaan kecepatan benda

$v_y = \frac{dy}{dt} = 2ct \qquad t = \frac{v_y}{2}$

$v_y = 2gy$ atau $v_y = \sqrt{2gy}$



Grafik v-t

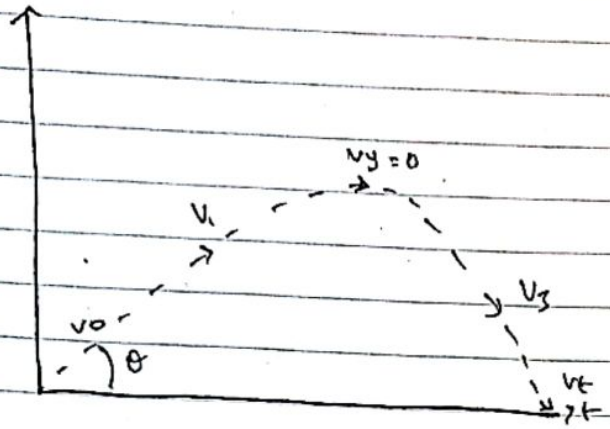


Grafik a-t

No.

Date :

F. Gerak Parabola



kecepatan di sembarang titik

$V = \sqrt{(Vx)^2 + (Vy)^2}$	kecepatan (Vx, Vy)	
	sumbu x	sumbu y
kondisi awal	$Vo \cos\theta$	$Vo \sin\theta$
saat t sekon	$Vo \cos\theta$	$Vo \sin\theta - gt$

	keduduan (x, y)		waktu yg diperlukan
	sumbu x	sumbu y	
keduduan awal	0	0	0
saat t sekon	$x = Vo \cos\theta . t$	$y = Vo \sin\theta t - \frac{1}{2}gt^2$	t
pada titik tertinggi	$x = \frac{Vo^2 \sin 2\theta}{2g}$	$y_{max} = \frac{Vo^2 \sin^2\theta}{2g}$	$t = \frac{Vo \sin\theta}{g}$
pada titik terjauh	$x_{max} = \frac{Vo^2 \sin 2\theta}{g}$	0	$t = 2\frac{Vo \sin\theta}{g}$