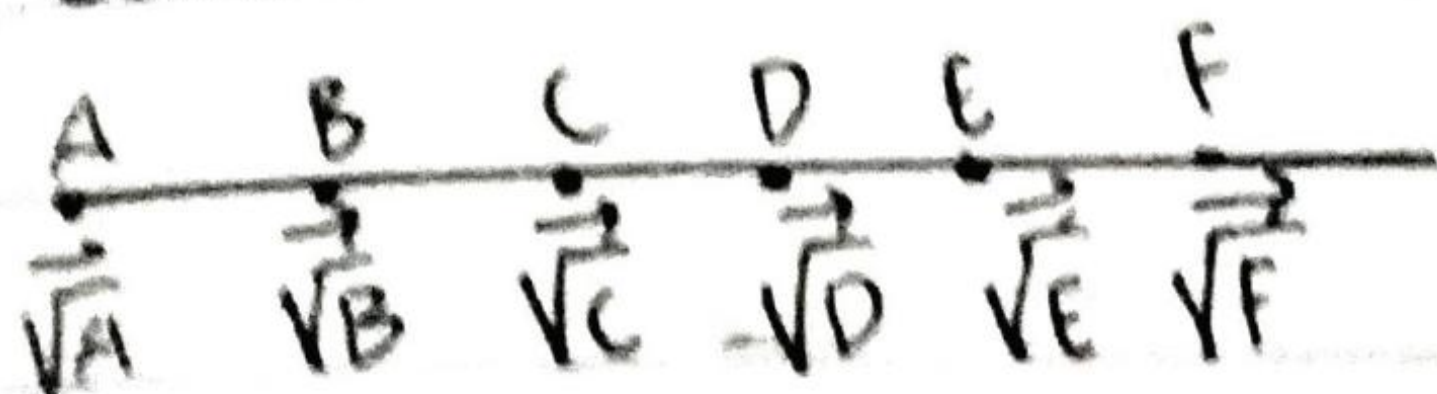


Nama : Elpin Nurul Rahmawati

Npm : 2013022038

Prodi : Pendidikan Fisika B

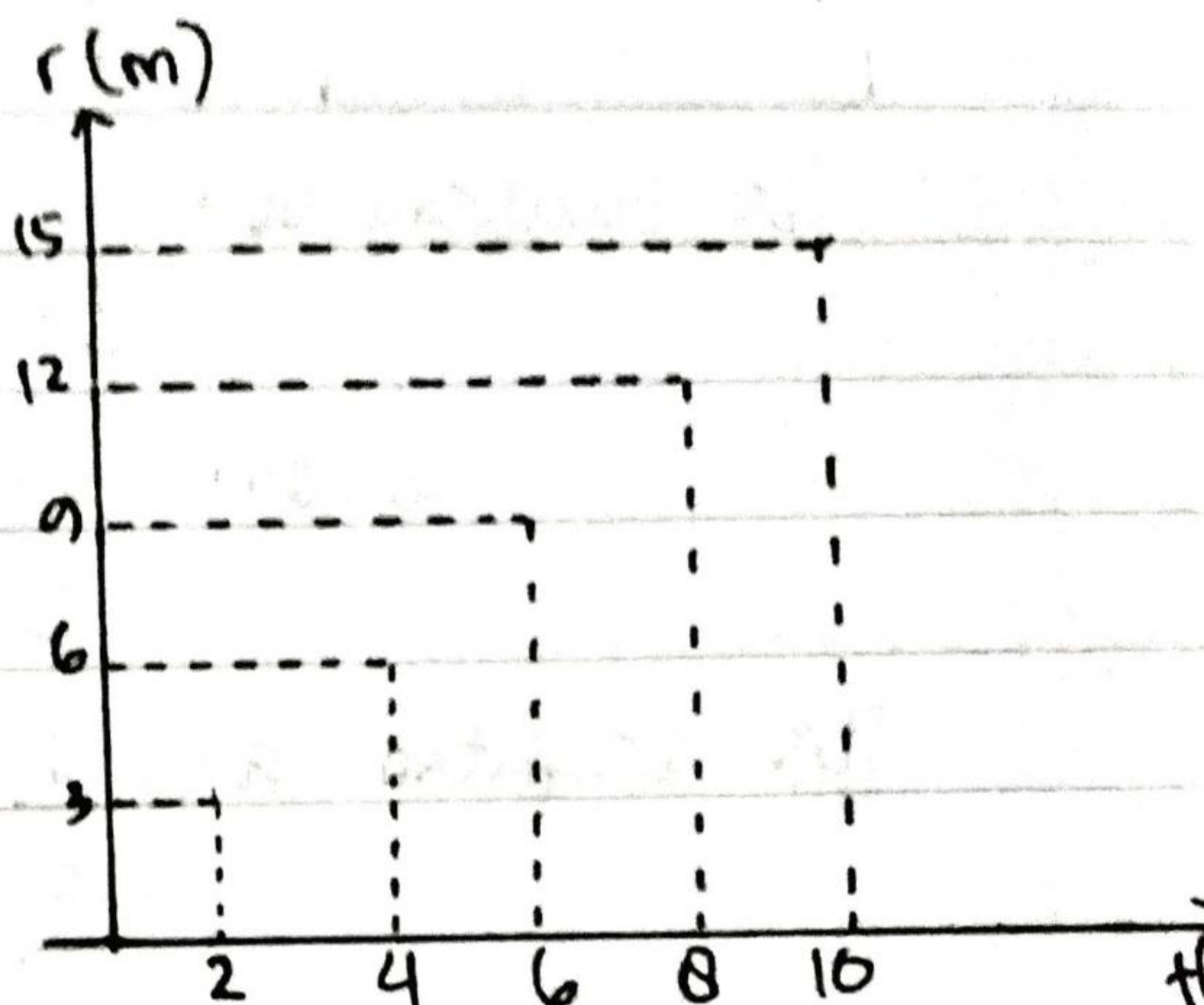
A Gerak lurus Beraturan (GLB)



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

Pers. Posisi	$r = v_0 + v \cdot t$ $x_t = v_x \cdot t$
--------------	--

Grafik Posisi terhadap waktu



$$\vec{v}_B = \vec{v}_0 + v \cdot t$$

$$3 = 0 + v \cdot 2$$

$$v = 3/2$$

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

Pers. Kecepatan $V_t = \frac{dx}{dt} = \text{konstan}$

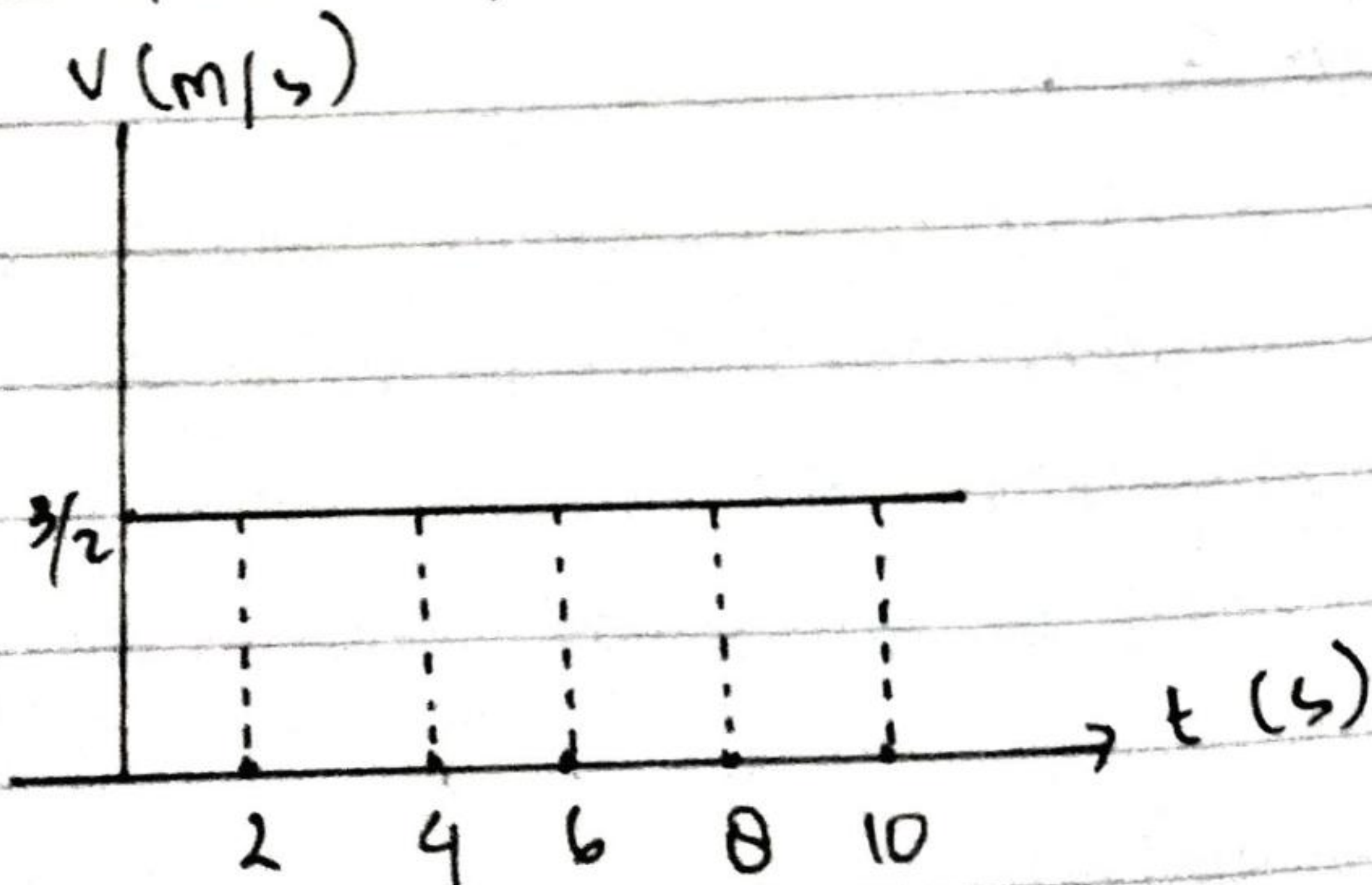
Contoh. $V_B = 3/2 \text{ m/s}$

$V_C = 6/4 = 3/2 \text{ m/s}$

Pers. Percepatan $a = \frac{\Delta V}{\Delta t} = \frac{V_2 - V_1}{t_2 - t_1} = 0$

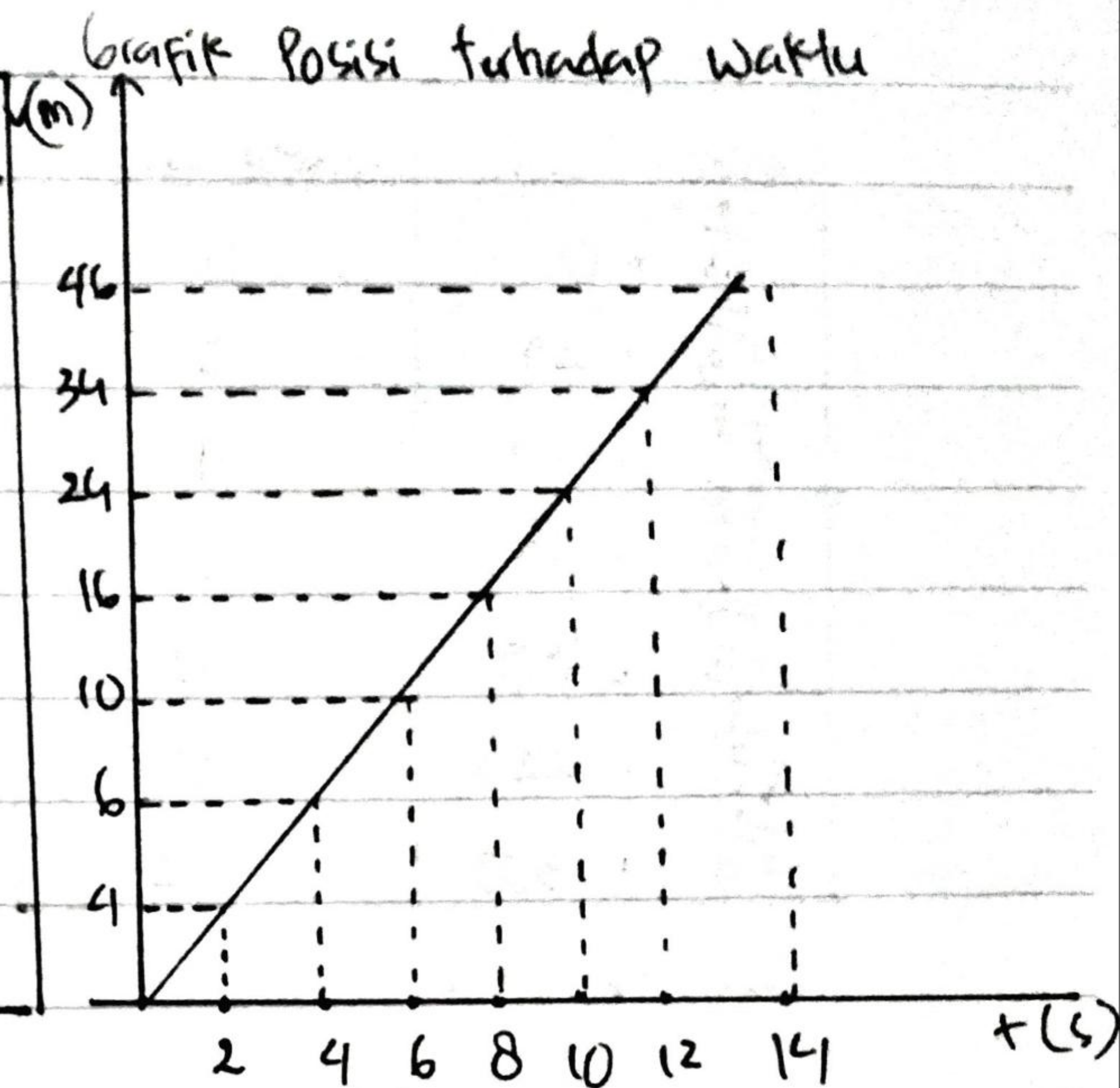
Contoh. $a = \frac{3/2 - 3/2}{4 - 2} = 0 \text{ m/s}^2$

grafik Kecepatan terhadap Waktu



B. Gerak lurus Berubah beraturan (GLBB)

Vektor Posisi	Waktu tumpuh
$\vec{r}_A = 0$	0
$\vec{r}_B = 4\vec{i}$	2
$\vec{r}_C = 6\vec{i}$	4
$\vec{r}_D = 10\vec{i}$	6
$\vec{r}_E = 16\vec{i}$	8
$\vec{r}_F = 24\vec{i}$	10
$\vec{r}_G = 34\vec{i}$	12
$\vec{r}_H = 46\vec{i}$	14



Pers. Posisi :

$$x_t = x_0 + Ct^2$$

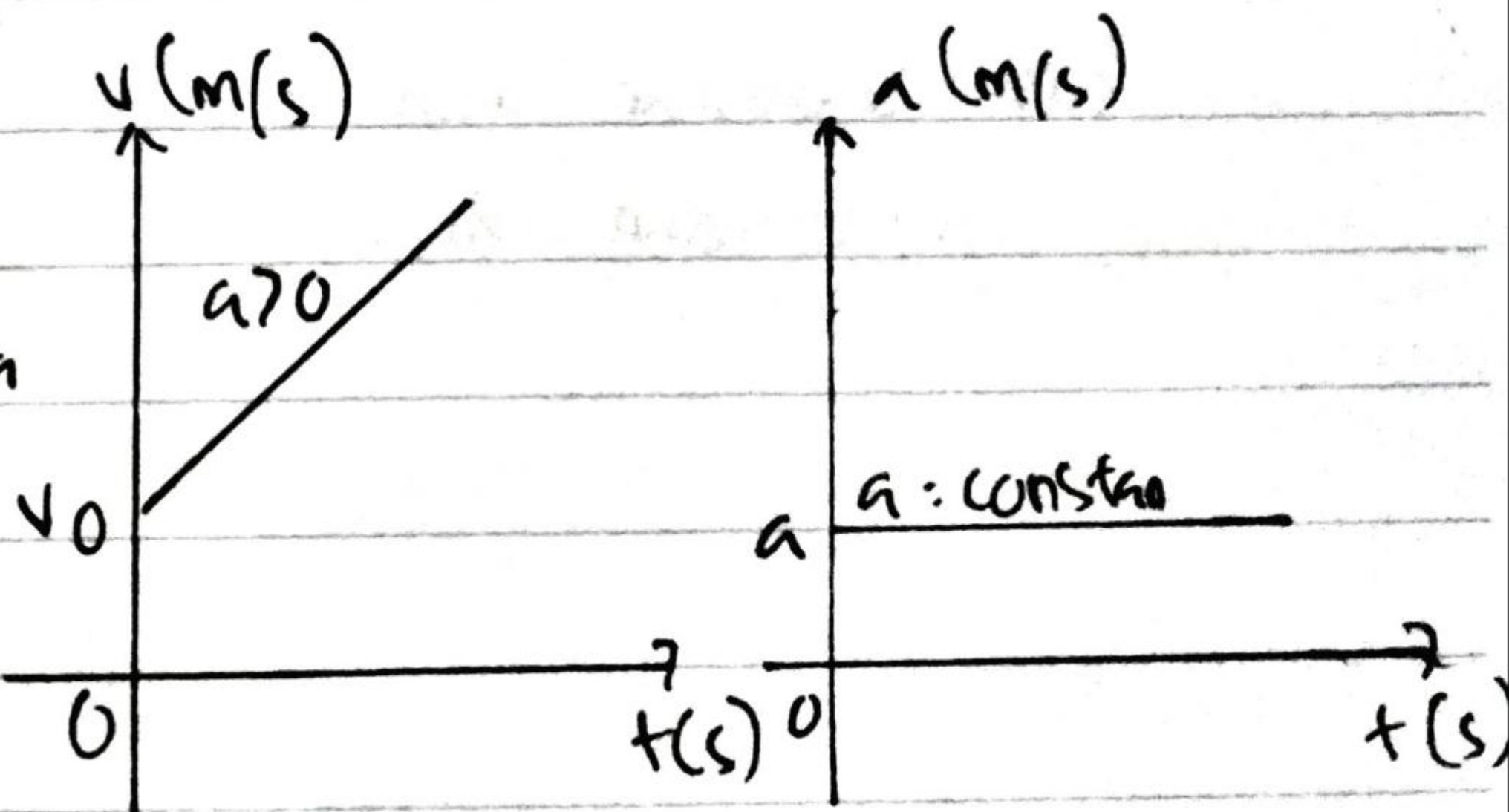
C : konstanta tegangan pada benda dan waktu

Pers. Kecepatan benda

$$v_t = v_0 + at$$

Pers. Percepatan benda

$$a = \text{konstan}$$

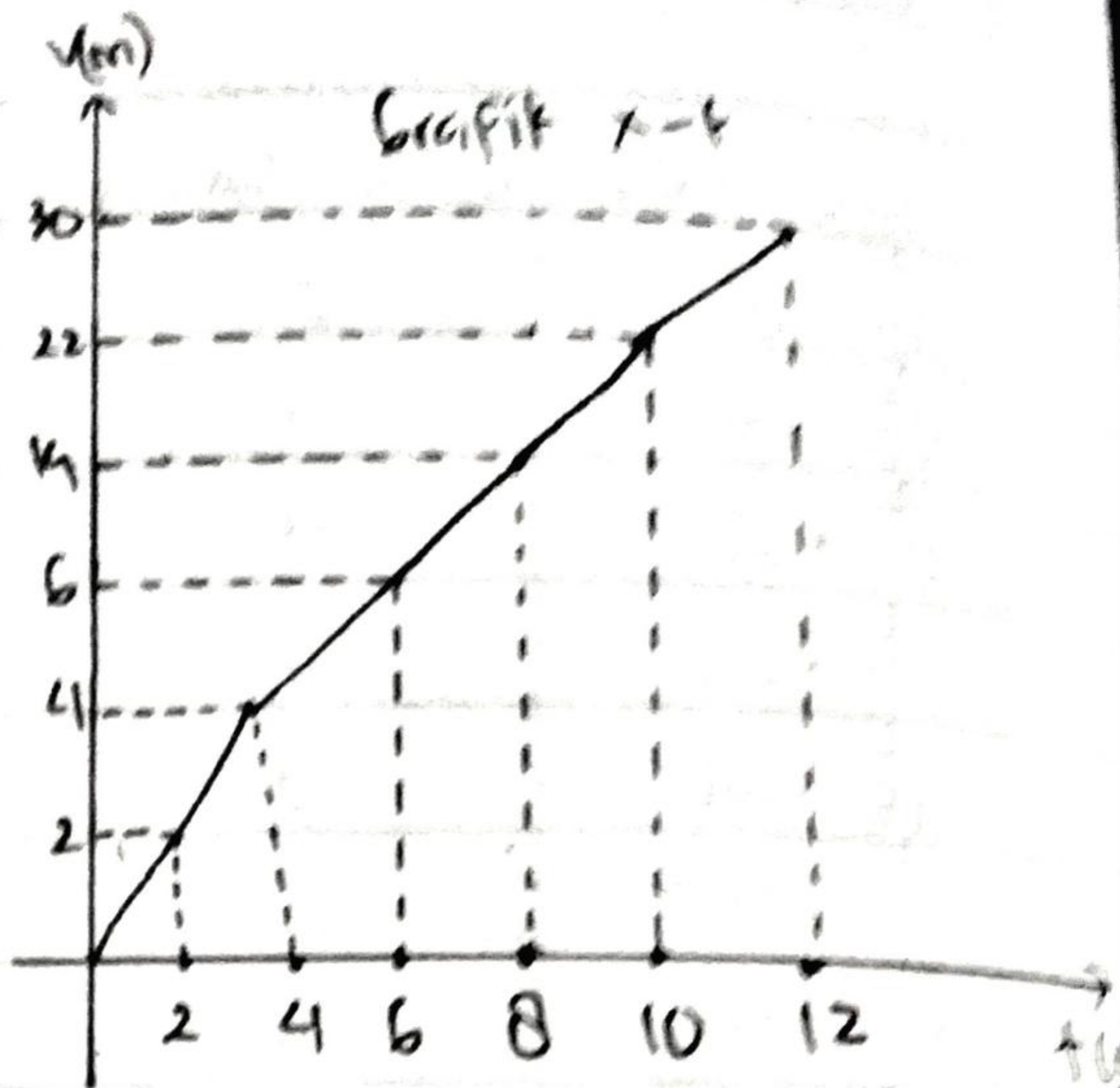


Grafik $v-t$

Grafik $a-t$

C. Gerak Vertikal ke atas

Vektor Posisi	Waktu tempuh
$\vec{r}_A = 0$	0
$\vec{r}_B = 25$	2
$\vec{r}_C = 45$	4
$\vec{r}_D = 85$	6
$\vec{r}_E = 145$	8
$\vec{r}_F = 225$	10
$\vec{r}_G = 305$	12

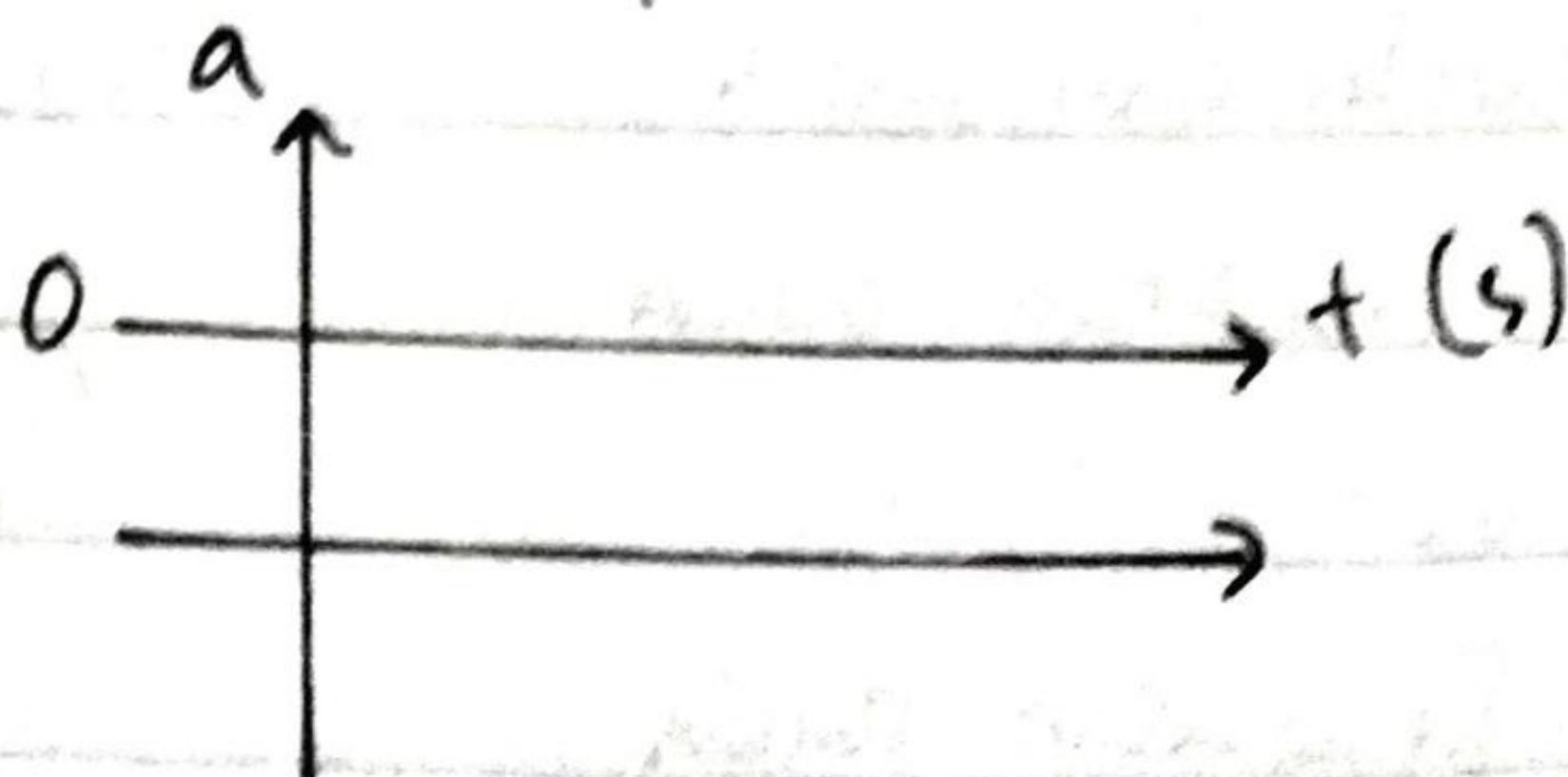
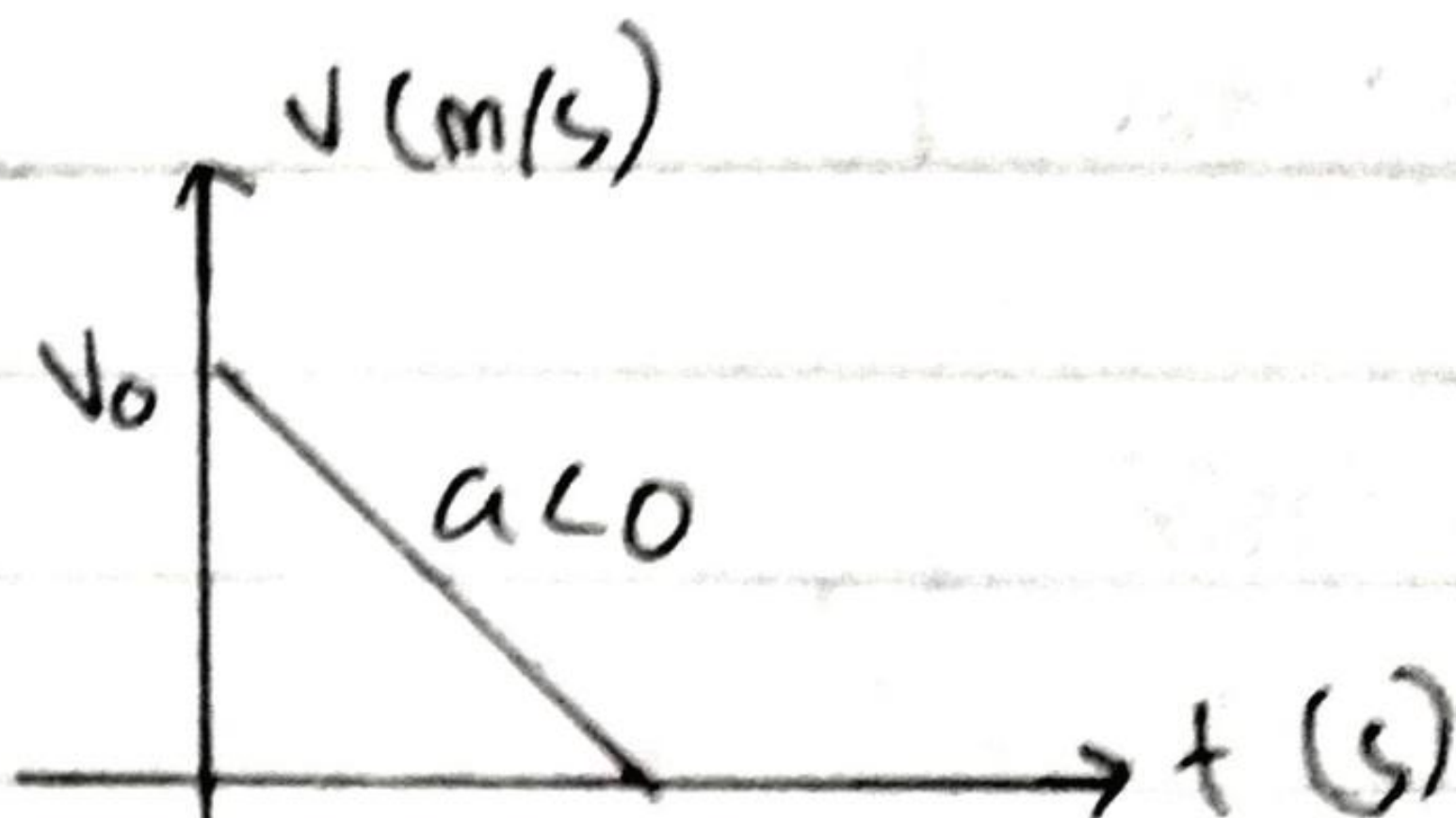


Pers. Kecepatan

$$v_t = v_0 - at$$

Pers. Persamaan benda

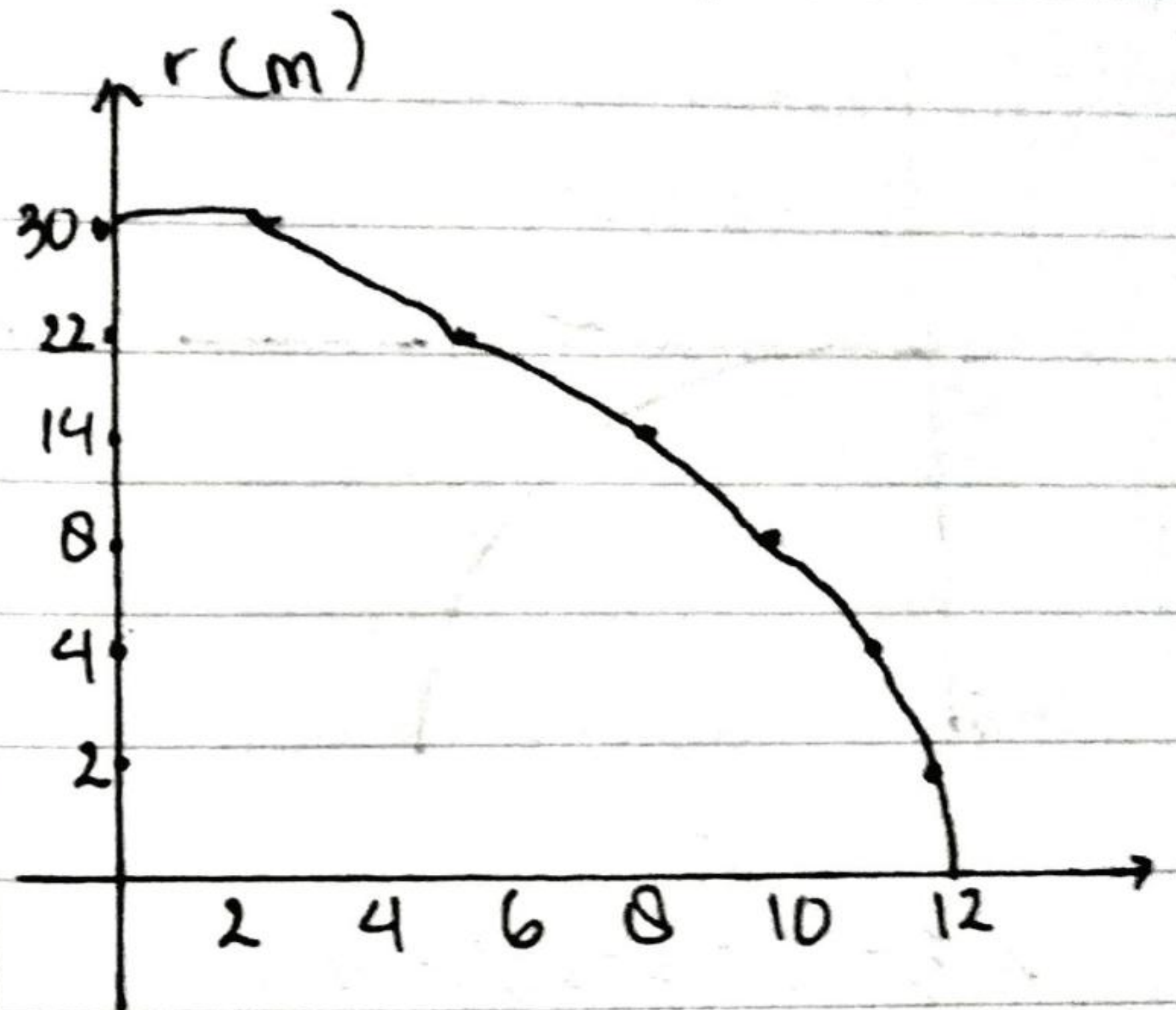
a : konstan diperlambat



D. Gerak Vertikal ke bawah

Vektor Posisi	Waktu tumpuh
$\vec{r}_A : 30\text{ m}$	0
$\vec{r}_B : 22\text{ m}$	2
$\vec{r}_C : 14\text{ m}$	4
$\vec{r}_D : 8\text{ m}$	6
$\vec{r}_E : 4\text{ m}$	8
$\vec{r}_F : 2\text{ m}$	10
$\vec{r}_G : 0\text{ m}$	12

grafik Posisi terhadap waktu

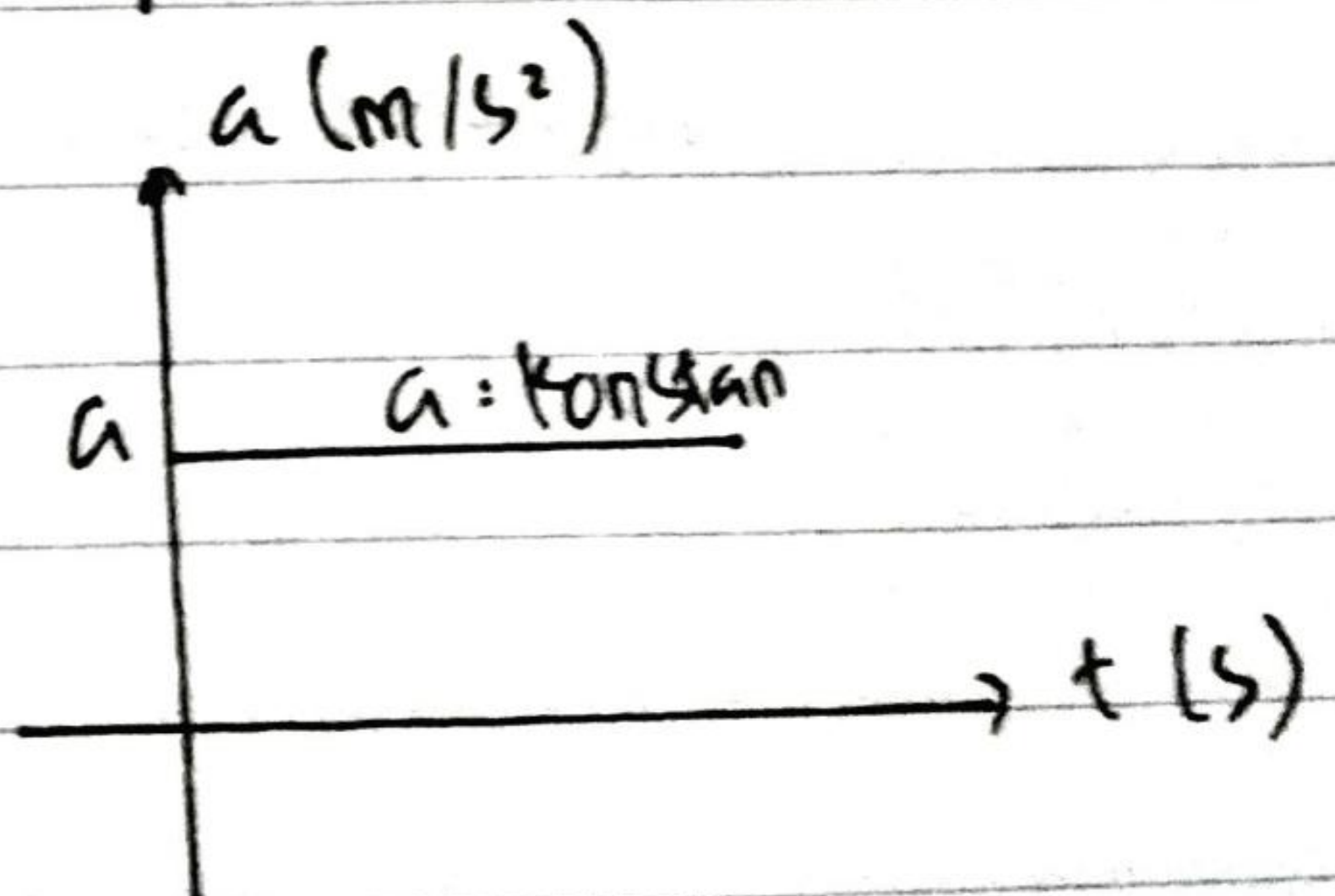
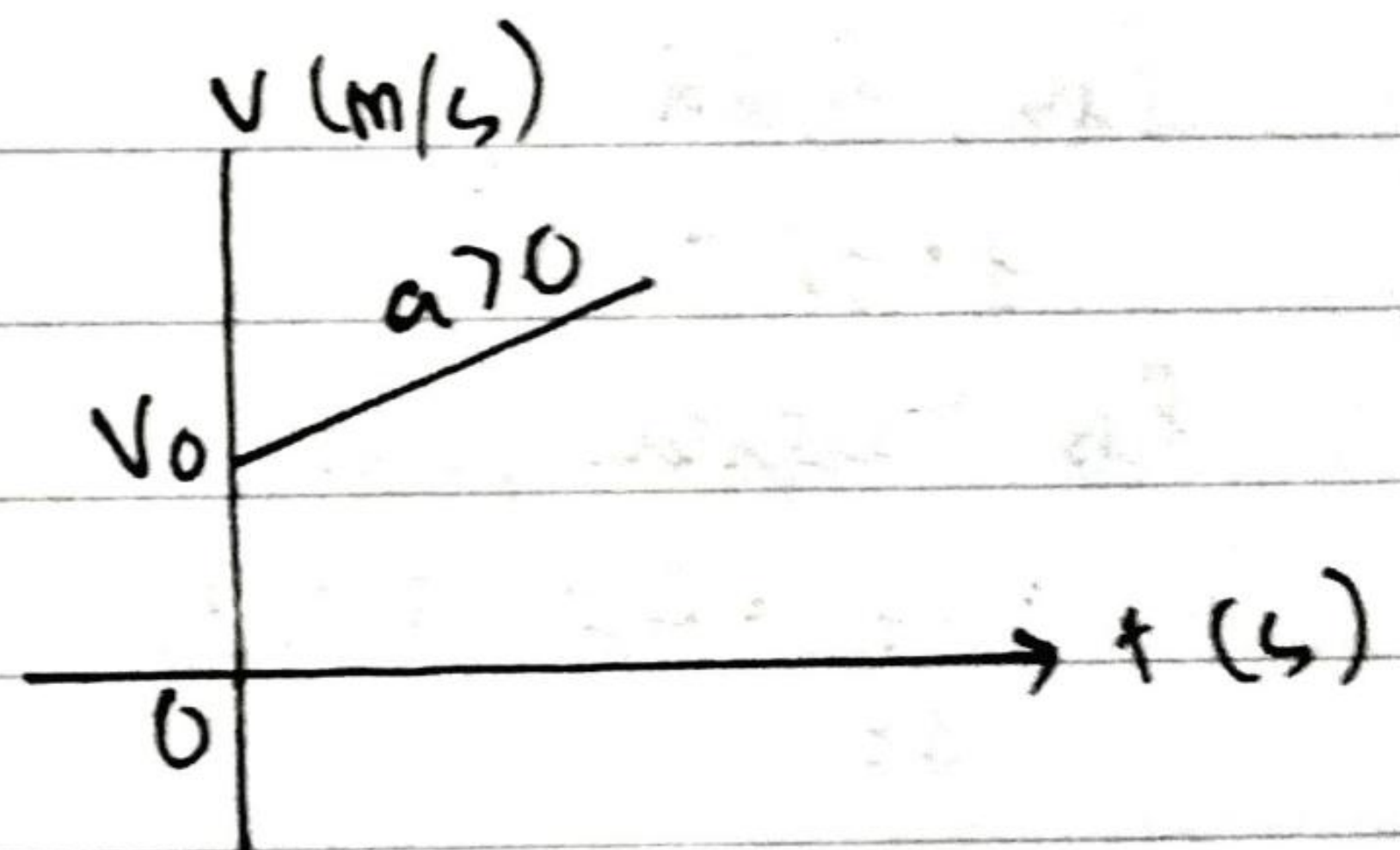


Pers. Kecepatan

$$v_t = v_0 + at$$

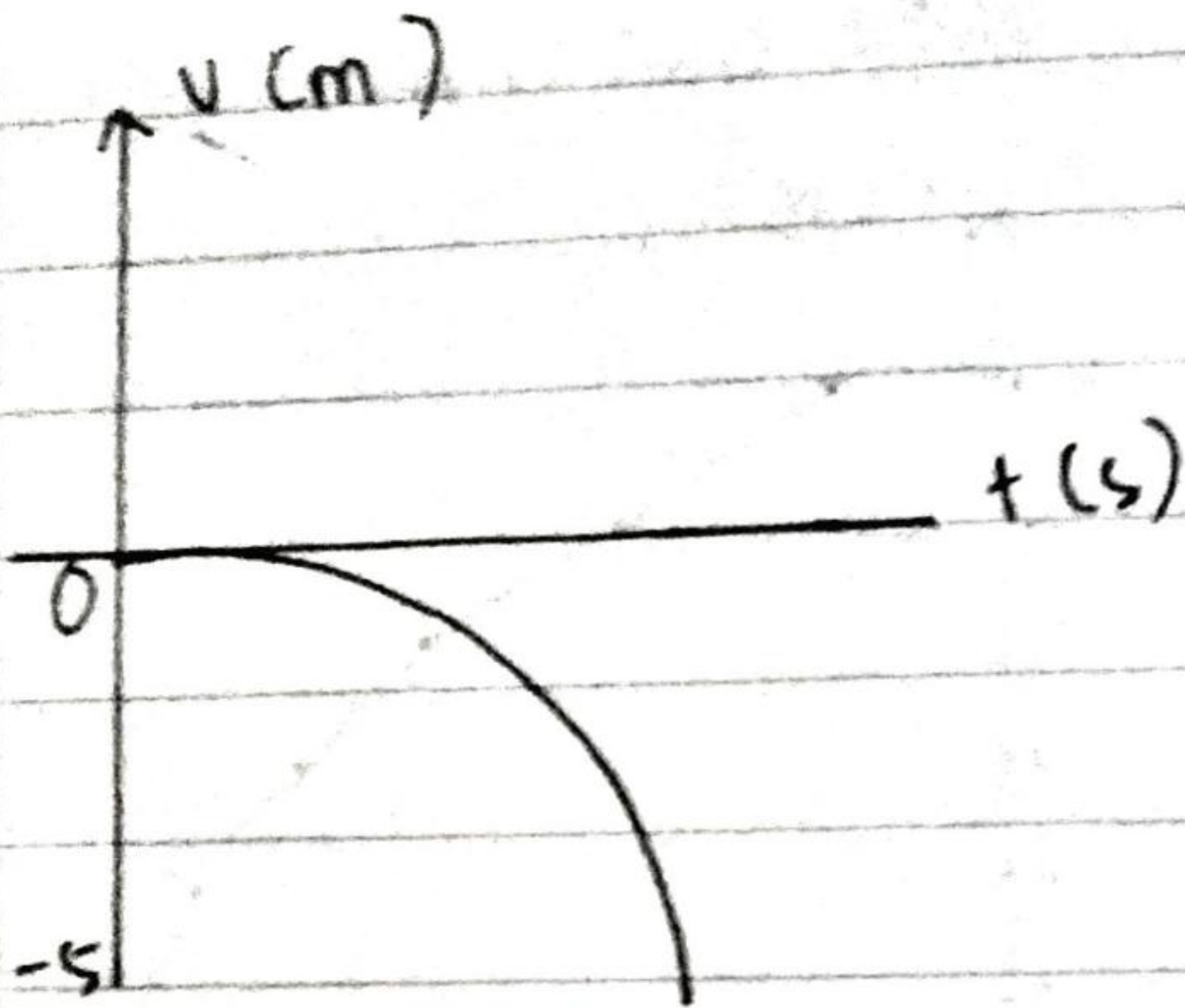
Pers. Percepatan

a : konstan dipercepat



grafik $a-t$

E Gerak Jatuh bebas



Vector Posisi	Waktu tempuh
$\vec{v}_A = 30\text{ s}$	0
$\vec{v}_B = 22\text{ s}$	2
$\vec{v}_C = 14\text{ s}$	4
$\vec{v}_D = 8\text{ s}$	6
$\vec{v}_E = 4\text{ s}$	8
$\vec{v}_F = 2\text{ s}$	10
$\vec{v}_G = 0\text{ s}$	12

Grafik s-t : berbentuk parabola

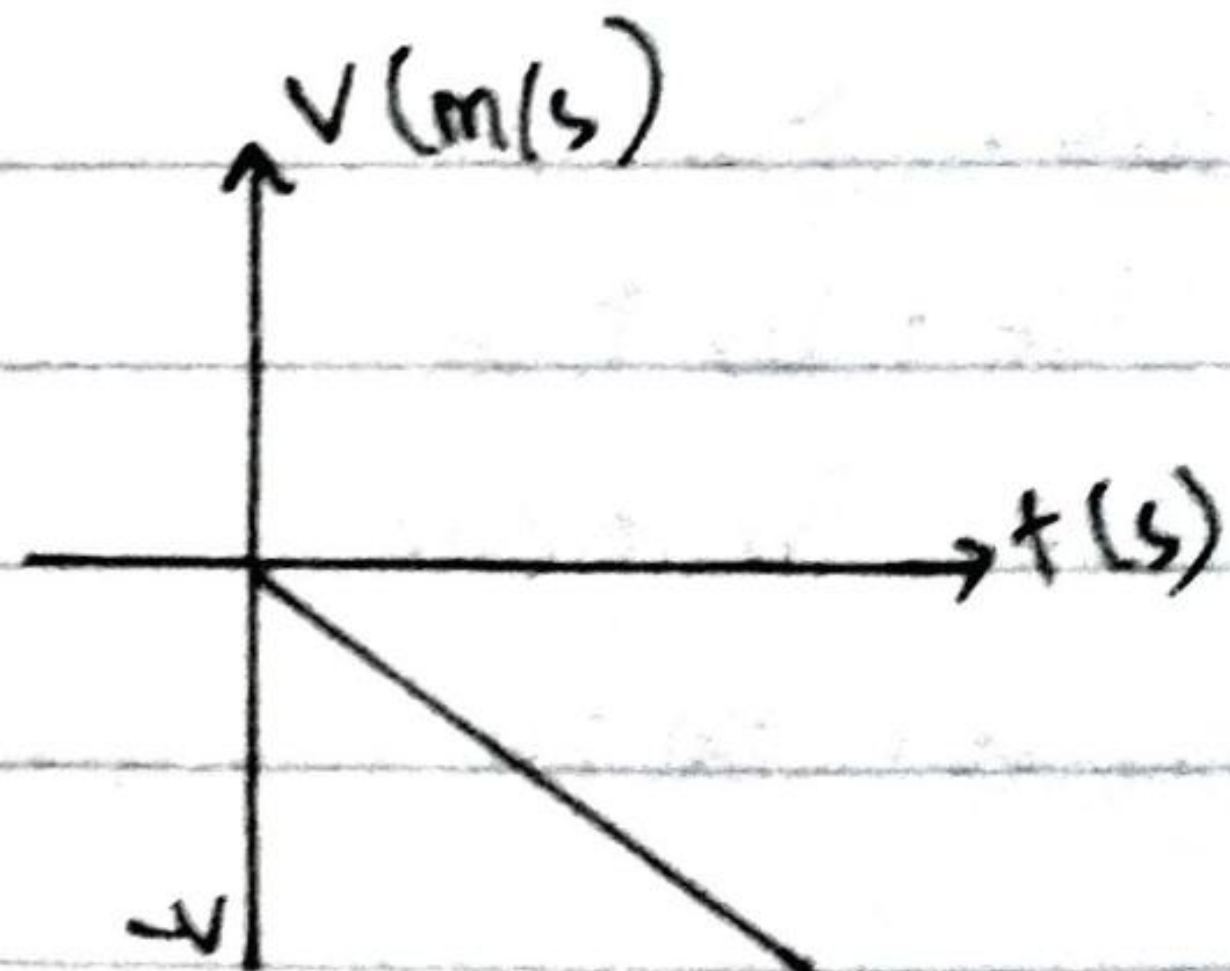
Pers. Posisi

$$y = y_0 + \frac{1}{2}gt^2$$

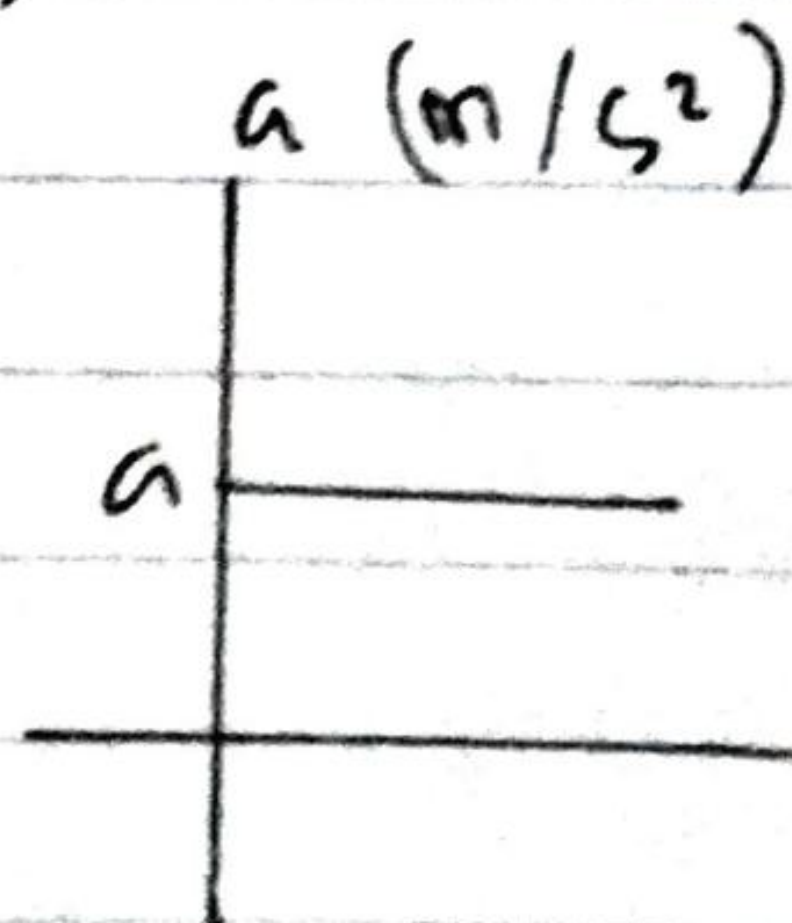
Pers. Kecepatan benda

$$v_y = \frac{dy}{dt} = gt \quad t = \frac{v_y}{g}$$

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

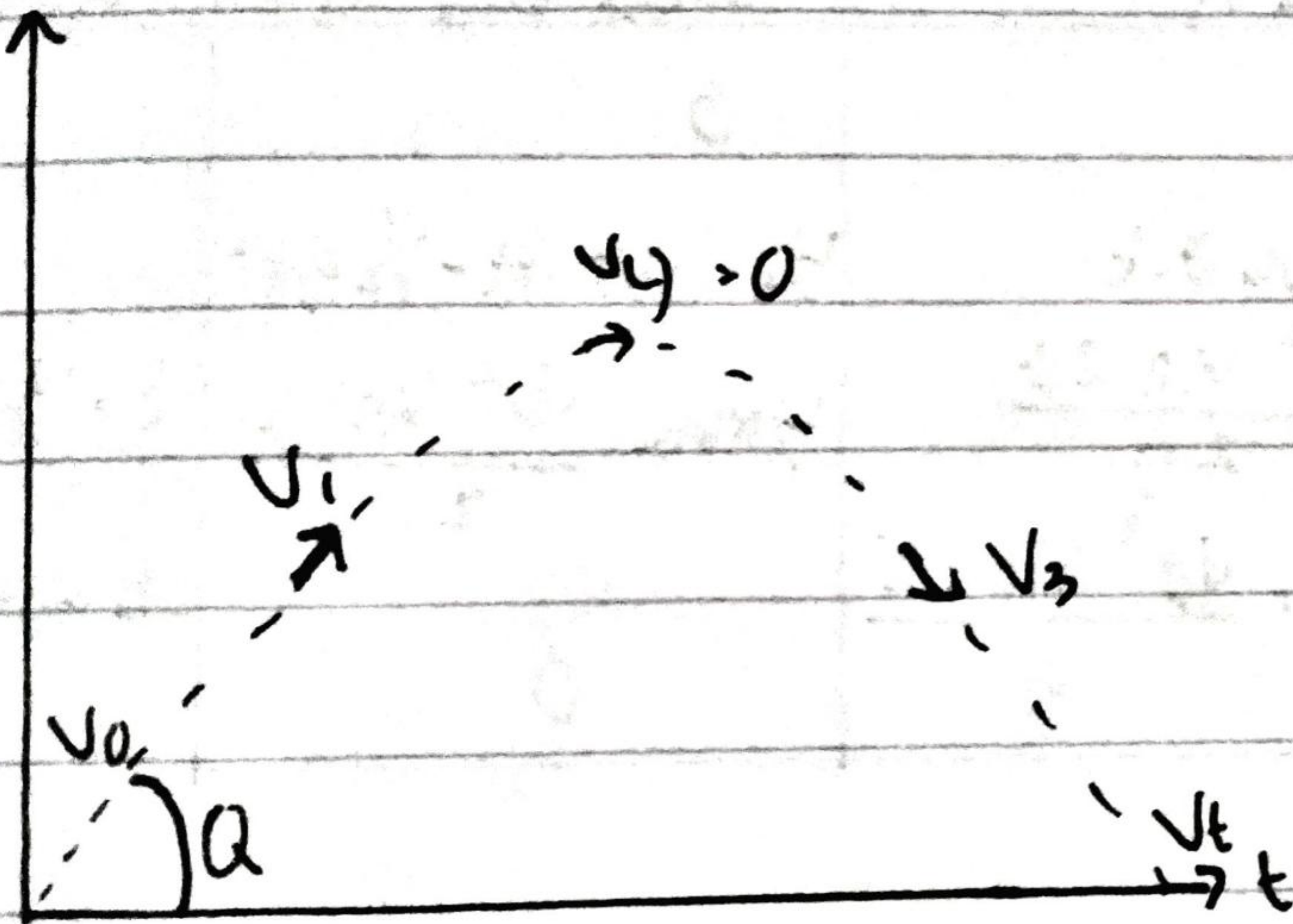


Grafik v-t



Grafik a-t

f. Gerak Parabola



Kecepatan di samping titik

$V = \sqrt{(V_x)^2 + (V_y)^2}$	Kecepatan (V_x, V_y)	
	Sumbu x	Sumbu y
Kondisi awal	$V_0 \cos \theta$	$V_0 \sin \theta$
Sert + Seton	$V_0 \cos \theta$	$V_0 \sin \theta \cdot t$

	Kedudukan (x,y)		Waktu (s)
	Sumbu x	Sumbu y	diperlukan
Kedudukan awal	0	0	0
Waktu t	$x = v_0 \cos \theta \cdot t$	$y = v_0 \sin \theta \cdot t - \frac{1}{2} g t^2$	t
Pada titik tertinggi	$x = \frac{v_0^2 \sin 2\theta}{g}$	$y_{\max} = \frac{v_0^2 \sin^2 \theta}{2g}$	$t = \frac{v_0 \sin \theta}{g}$
Pada titik terjauh	$x_{\max} = \frac{v_0^2 \sin 2\theta}{g}$	0	$t = \frac{2 v_0 \sin \theta}{g}$