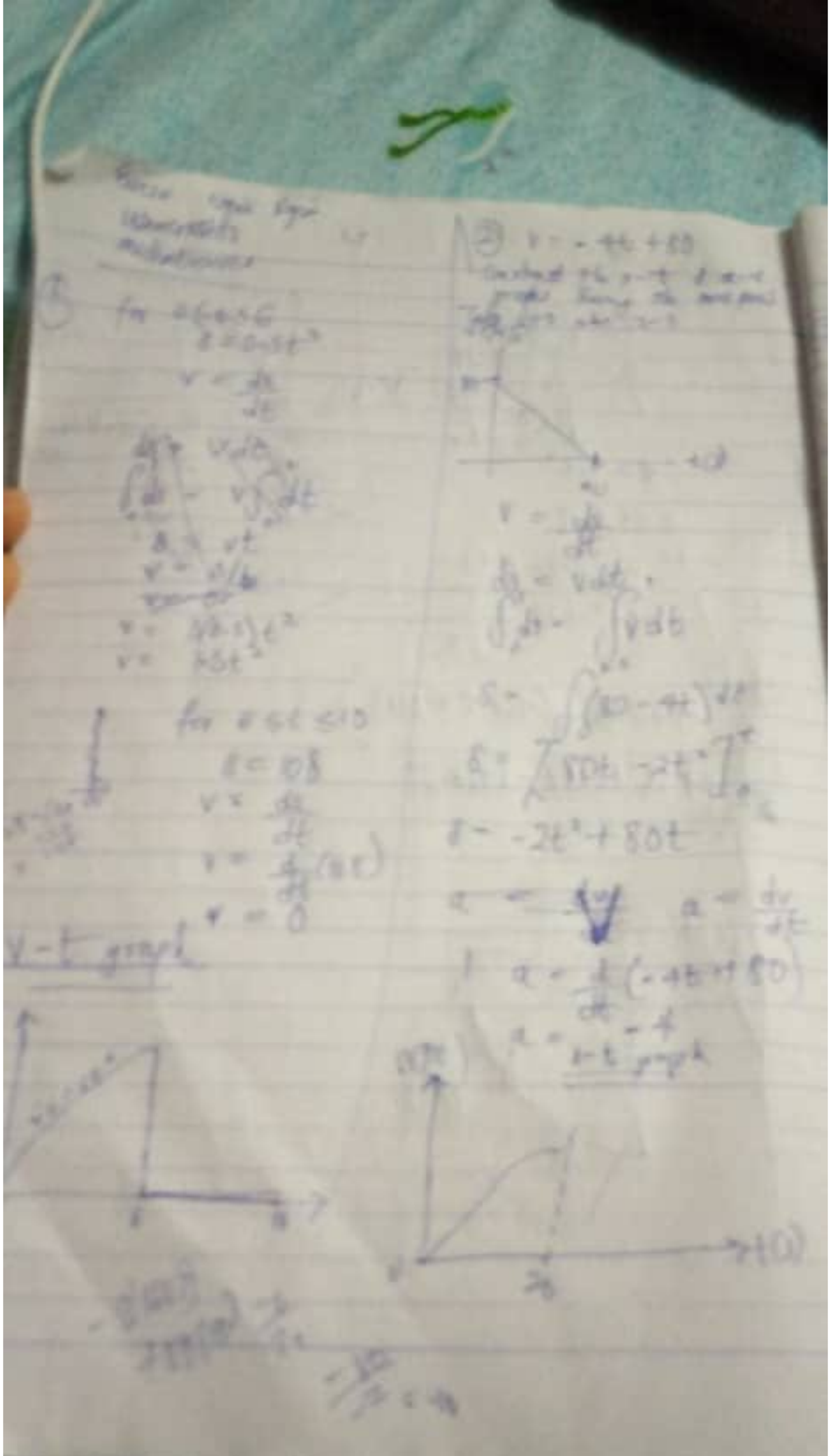

$a = V\frac{dv}{ds}$

$\frac{dv}{ds} = 0.25$

$a = 0.25(0.25s)$

$a = 0.625\ s$

a - s graph

a(m/s²)

0.625

s(m)

for $0 \le t \le 5$

$s = 3t^2$

$v = ds/dt = 6t$

$a = \frac{dv}{dt} = 6$

for $5 < t \le 10$

$s = 30t - 75$

$V = \frac{ds}{dt} = 30$

$a = \frac{dv}{dt} = 0$

for $0 \le t \le 5$

$a = 20$

$v = \int a\,dt$

$v = [20t]_0^t$

$v = 20t$

for $5 < t \le 10$

$a = -10$

$v = \int_5^t -10$

$v = [-10t]_5^t$

$v = (-10t - (-10(5))$

$v = -10t + 50$

v-t graph

$v = 50 - 10t$

$v = 30t$

150

(2)

$0 \le t \le 5$

$s = \int_0^t v\,dt$

$s = \int_0^t 30t\,dt$

$s = \left[\frac{30t^2}{2}\right]_0^t$

$s = 15t^2$

$5 \le t \le 15$

$s = \int_5^t (225 - 15t)\,dt$

$s = \left[-7.5t^2 + 225t\right]_5^t$

$s = \left(-7.5t^2 + 225t\right) - \left(-187.5 + 5625\right)$

$s = -7.5t^2 + 225t - 5437.5$