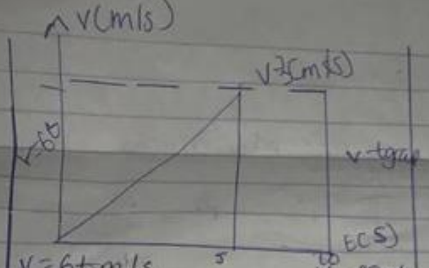
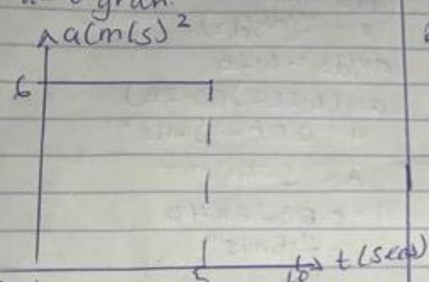


V = 6t m/s V = 30m/s

0 ≤ t ≤ 5 secs 5 ≤ t ≤ 10 secs

a = dv/dt = 6 m/s² a = dv/dt = const

a – t graph



) 0 ≤ t ≤ 5 secs

$a = 20 m/s^2$

dv = a dt

$\int_0^v dv = \int_0^t 20 dt$

V = 20t

when t = 5

V = 20 × 5

= 100 m/s

5 ≤ t ≤ 10 secs

a = -10 m/s

$\int_{100}^{v} dv = \int_5^t -10 dt$

V - 100 = -10t - (-10t)

V - 100 = -10t - (-10 × 5)

V - 100 = -10t + 50

when v = 0

0 = -10t + 150

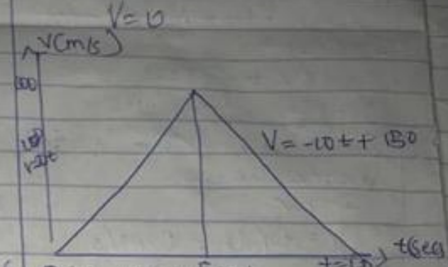
10t = 150

t = 150/10 = 15 secs

5 ≤ t ≤ t' t' = 15 secs

V = -10 × 15 + 150

V = 0



6 0 ≤ t ≤ 5 s V = 30t

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

$S = 15t^2 m$

when t = 5s

$S = 15(5)^2$

S = 375 m

5s ≤ t ≤ 15s

$\int_{375}^{s} S = \int_5^t (-15t + 225)$

$S - 375 = -15/2\, t^2 + 225t$

$-(-15/2 (5)^2 + 225(5))$

$S - 375 = -7.5t^2 + 225t +$

187.5 + 1125

$S = -7.5t^2 + 225t + 1687.5$

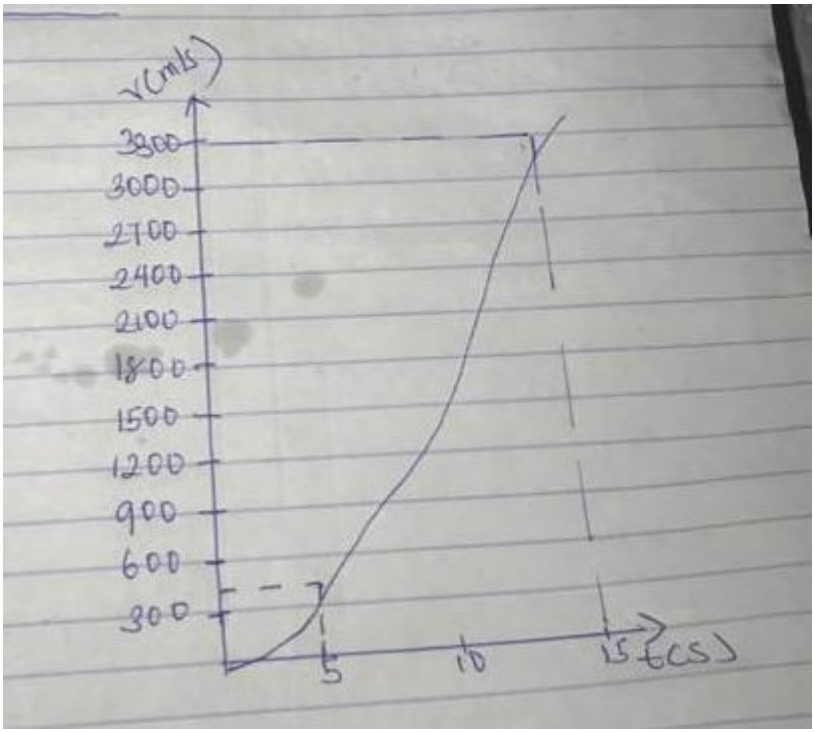
when t' = 15 s

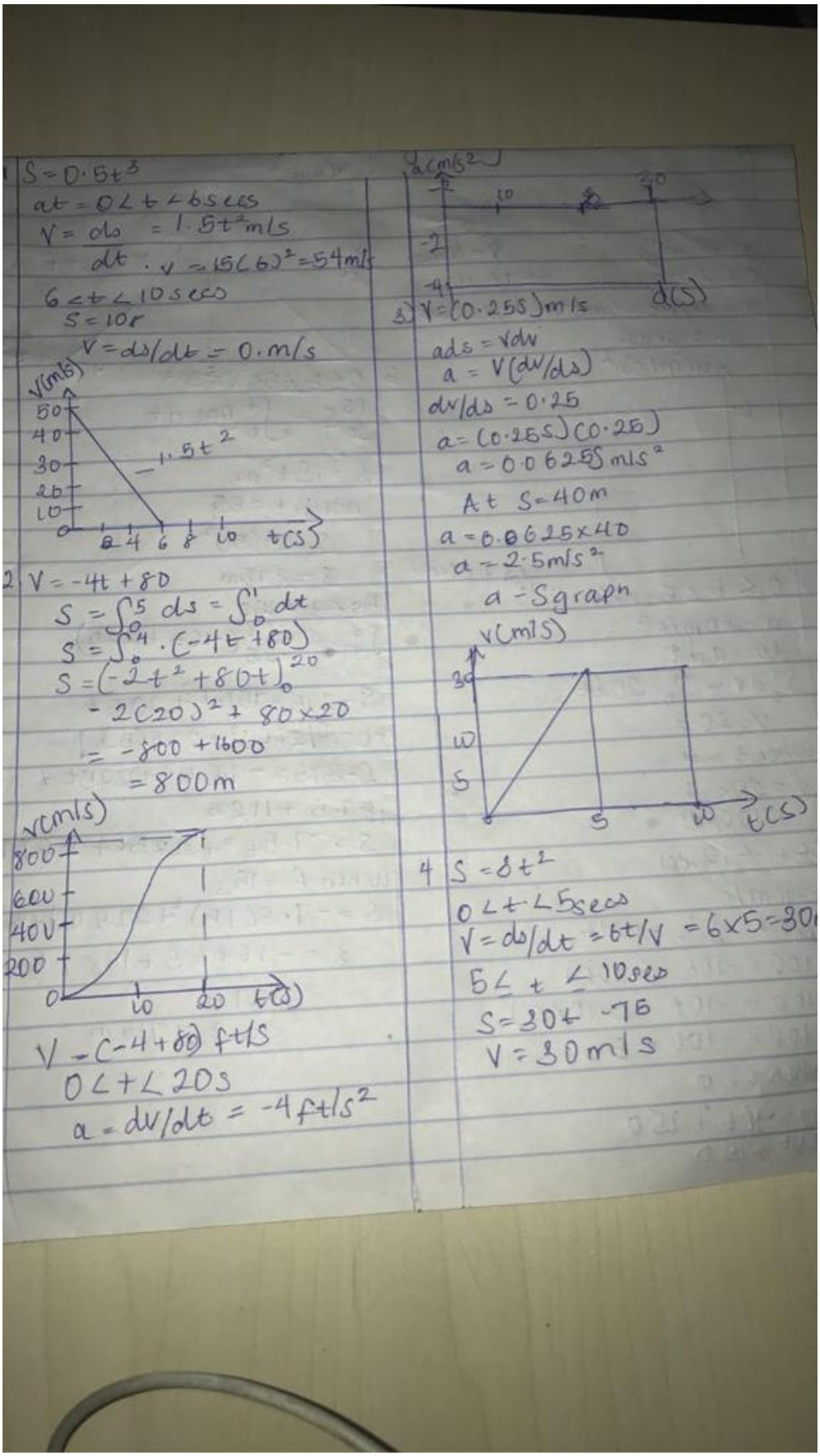
$S = -7.5(15)^2 + 225(15) + 1687.5$

S = -1687.5 + 1687.5 +

3,375

S = 3,375 m


V(m/s)
3900
3000
2700
2400
2100
1800
1500
1200
900
600
300
5
10
15
t(s)


1 S = 0.5t³
at = 0 < t < 6 secs
V = ds/dt = 1.5t² m/s
v = 1.5(6)² = 54 m/s
6 < t < 10 secs
S = 10t
V = ds/dt = 0 m/s
v(m/s)
50
40
30
20
10
1.5t²
2 4 6 8 10 t(s)
2 V = -4t + 80
S = ∫ ds = ∫ dt
S = ∫ (-4t + 80)
S = (-2t² + 80t)
-2(20)² + 80×20
= -800 + 1600
= 800m
v(m/s)
800
600
400
200
10 20 t(s)
V = (-4 + 80) ft/s
0 < t < 20s
a = dv/dt = -4 ft/s²
a(m/s²)
2
-2
-4
10 20
d(s)
3 V = (0.25s) m/s
ads = vdv
a = V(dv/ds)
dv/ds = 0.25
a = (0.25s)(0.25)
a = 0.0625s m/s²
At S = 40m
a = 0.0625×40
a = 2.5 m/s²
a - S graph
v(m/s)
30
10
5
5 10 t(s)
4 S = 3t²
0 < t < 5 secs
V = ds/dt = 6t/V = 6×5 = 30
5 < t < 10 sec
S = 30t - 75
V = 30 m/s