① $a(t) = -32$

a) $v(t) = -32t + c$

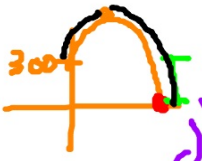
$29 = -32(3) + c$

$\boxed{v(t) = -32t + 125}$

$p(t) = -16t^2 + 125t + c$

$129 = -16(9)^2 + 125(9) + c$

$\boxed{p(t) = -16t^2 + 125t + 300}$



b) $p(0) = 300\text{ ft}$

$v(0) = 125\text{ ft/sec.}$

c) $v(t) = -32t + 125 = 0$

$t = 3.906\text{ sec}$

d) $= p(3.906) = 544.141\text{ ft}$

e) $p(t) = -16t^2 + 125t + 300 = 0$

$t = 9.738\text{ sec.}$

$v(9.738) = -186.616\text{ ft/sec}$

e) Displacement

$\int_0^{9.738} (-32t + 125) = -300.008\text{ ft}$

Total Distance $\int_0^{9.738} |-32t + 125| = 788.290\text{ ft.}$

$$\int_0^{9.738} -32t+125$$

Math - 9

fnInt((equation), x, start, end)

fnInt((-32x+125), x, 0, 9.738)

fnInt((abs(-32t+125)), x, 0, 9.738)

② a) $a(t) = -32$

$v(t) = -32t + C$

$-40 = -32(1) + C$

$\boxed{v(t) = -32t - 8}$

$p(t) = -16t^2 - 8t + C$

$37 = -16(.5)^2 - 8(.5) + C$

$\boxed{p(t) = -16t^2 - 8t + 45}$

b) $p(t) = -16t^2 - 8t + 45 = 0$

$t = 1.446 \text{ sec}$

$v(1.446) = -54.272 \text{ ft/sec}$

c) $p(1.1) = 16.84 \text{ ft}$

$v(1.1) = -43.2 \text{ ft/sec}$

③ $a(t) = 2t - 6$

a) $v(t) = t^2 - 6t + c$

$-2 = 4^2 - 6 \cdot 4 + c$

$\boxed{v(t) = t^2 - 6t + 6}$

$p(t) = \frac{1}{3}t^3 - 3t^2 + 6t + c$

$5 = \frac{1}{3}(3)^3 - 3(3)^2 + 6(3) + c$

$\boxed{p(t) = \frac{1}{3}t^3 - 3t^2 + 6t + 5}$

b) $\int_0^6 t^2 - 6t + 6 = 0$ ft

Displacement

$\int_0^6 |t^2 - 6t + 6| = 13.856$ ft

Total Distance

c) $v(t) = t^2 - 6t + 6 = 8.5$

$t = 6.391$ sec

$p(6.391) = 7.825$ ft