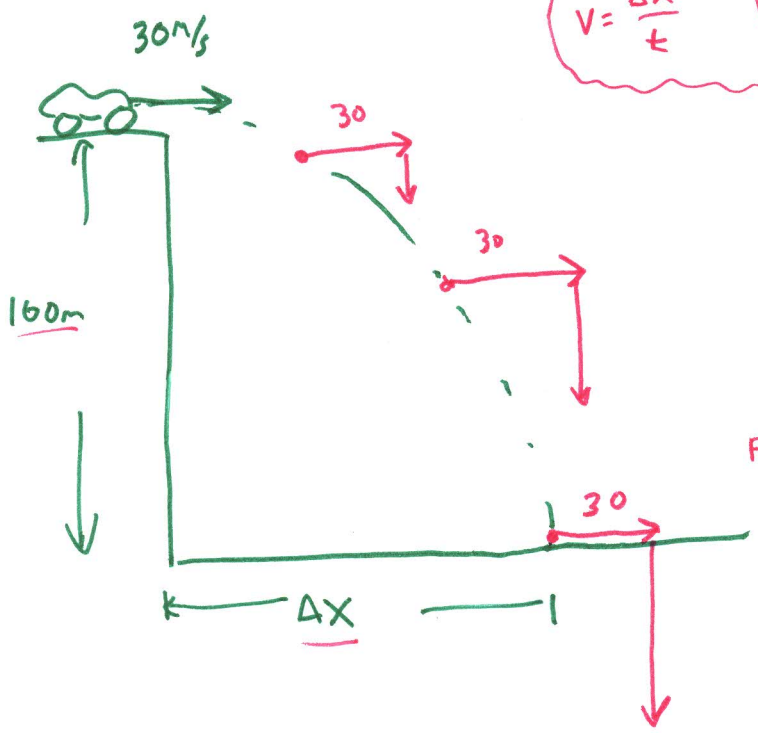
HORIZONTAL OFF A CLIFF PROBLEMS



X EQUATIONS

$V = \frac{\Delta x}{t}$

SEPERATE THE MOTIONS

X	Y
$V = 30 \frac{m}{s}$	$V_i = 0$
$\Delta x = ?$	$a = -9.8 \frac{m}{s^2}$
$t = 4.52s$	$\Delta y = -100m$
	$t = 4.52s$

Y EQUATIONS

- $V_f = V_i + at$
- $\Delta y = V_i t + \frac{1}{2} a t^2$
- $V_f^2 = V_i^2 + 2 \cdot a \Delta y$
- $\Delta y = \frac{1}{2}(V_f + V_i)t$

FINDING Δx:

$\Delta x = V \cdot t$

$= (30)(4.52)$

$= 135.5m$

FINDING t:

$\Delta y = \cancel{V_i t}^{0} + \frac{1}{2} a t^2$

$t = \sqrt{\frac{2\Delta y}{a}} = \sqrt{\frac{2(-100)}{-9.8}}$

$= 4.52s$