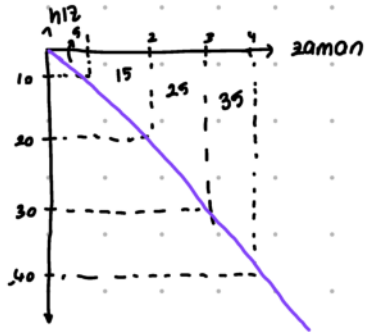
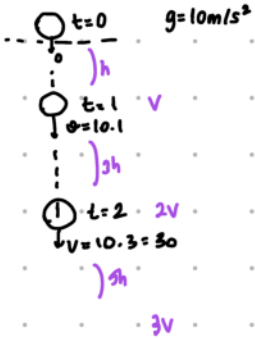
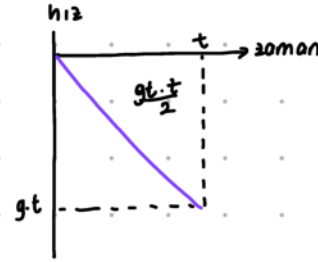
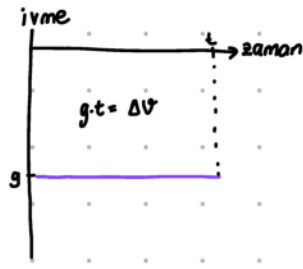
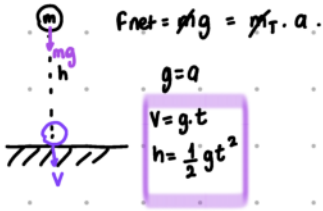


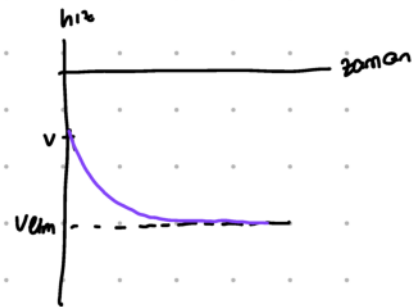
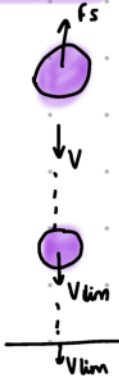
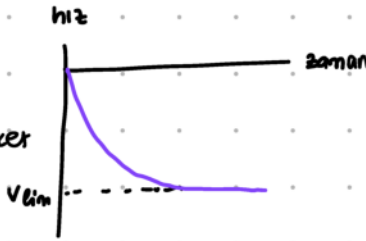
atışlar

1) Serbest Düşme:

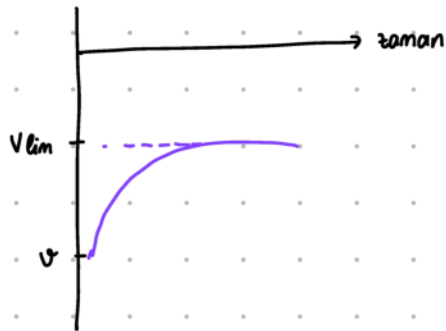
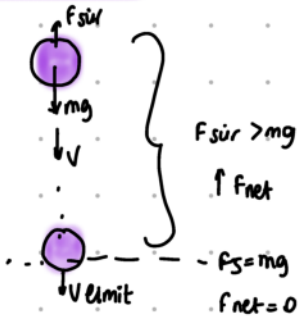


Hava direnci

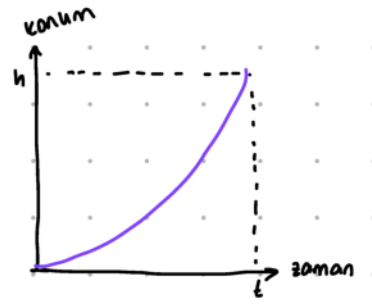
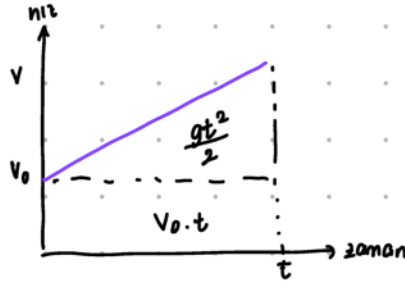
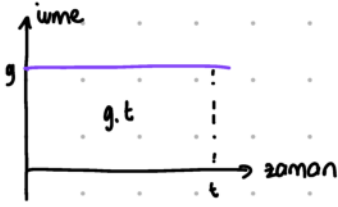
$V < V_{limit}$



$V > V_{limit}$



2) Yukarıdan Aşağı Düşey Atış:

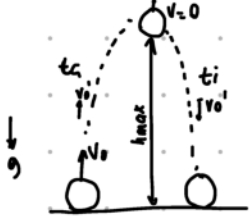


$$v = v_0 + gt$$

$$h = v_0 t + \frac{1}{2} gt^2$$

$$v^2 = v_0^2 + 2gh$$

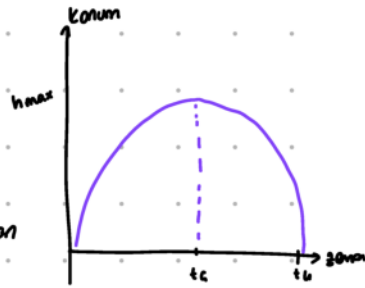
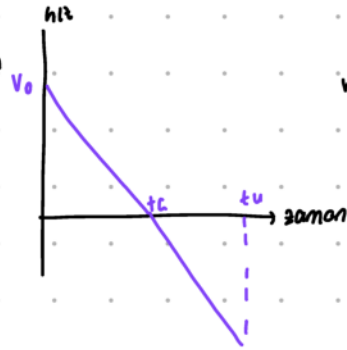
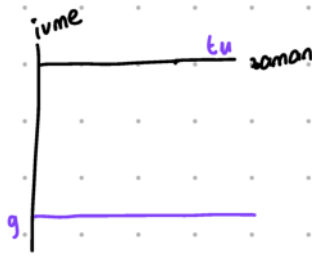
3) Aşağıdan Yukarıya Düşey Atış:



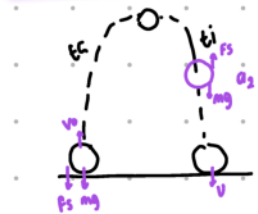
$$t_{\text{ucuş}} = t_{\text{ç}} + t_{\text{i}}$$

$$t_{\text{ucuş}} = \frac{2v_0}{g}$$

$$h_{\text{max}} = \frac{1}{2} gt_{\text{i}}^2$$



Sürtünme varsa

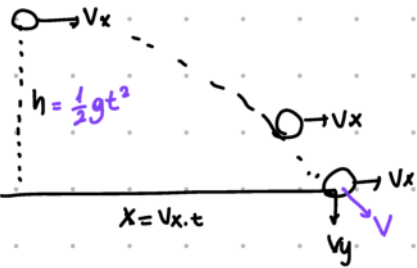


$$a_1 > a_2$$

$$t_{\text{iniş}} > t_{\text{çıkış}}$$

$$F_{\text{net}} = F_{\text{air}} + mg \quad a_1$$

4) Yatay Atış:



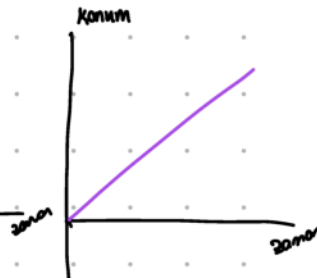
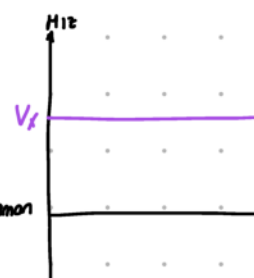
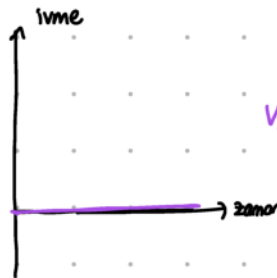
$$a_x = 0$$

$$a_y = g$$

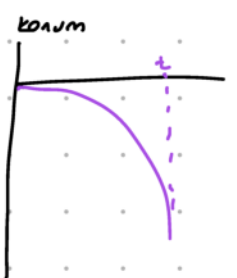
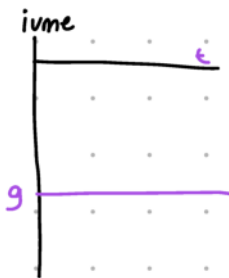
$$v_y = g \cdot t$$

$$v = \sqrt{v_x^2 + v_y^2}$$

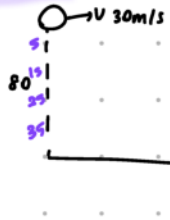
Yatay



Düşey



örnek :



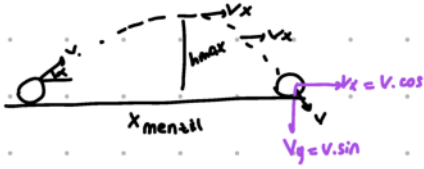
yatayda 30m/s atılan cisim için

a) $t_{kucuk} \rightarrow 4s$

b) $x = 30 \cdot 4 = 120$

c) gere. carpma hızı? $\rightarrow$

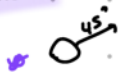
5) Eğik Atış :



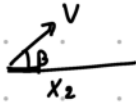
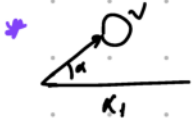
$$x_{menzil} = v_x \cdot t_u \rightarrow \frac{2v_y}{g}$$

$$h = \frac{1}{2} g t^2$$

not:

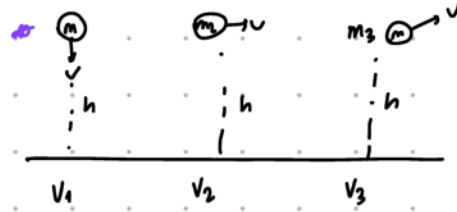


atılırsa x_{menzil} max olur.

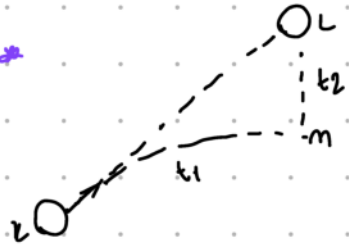


$$\alpha + \beta = 90 \text{ ise}$$

$$x_1 = x_2$$



$$V_1 = V_2 = V_3$$



$$t_1 = t_2 \text{ olur.}$$