

# PARABOLIC

## *Calculations on the parabolic movement*

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### 1. Setting the movement

Two data are needed. Usually they will be the initial speed and the shot angle, but they also can be any other couple of data, as the reach and the maximum height, etc...

The screenshot shows a software window titled "Parabolic shot" with a menu bar (File, Tools, Info). The interface is divided into several sections:

- Diagram:** A green background showing a parabolic trajectory. The initial velocity vector  $V_0$  is shown at an angle  $\alpha$  from the horizontal. The initial height is  $Y_0$ . The maximum height is labeled "Height" and the horizontal distance is labeled "Reach".
- Movement parameters table:**

Parameter	value	data?
$V_0$ (m/s)	<input type="text"/>	<input checked="" type="checkbox"/>
angle ( $^\circ$ )	<input type="text"/>	<input checked="" type="checkbox"/>
$V_x$ (m/s)	<input type="text"/>	<input type="checkbox"/>
$V_{y0}$ (m/s)	<input type="text"/>	<input type="checkbox"/>
Reach (m)	<input type="text"/>	<input type="checkbox"/>
Height (m)	<input type="text"/>	<input type="checkbox"/>
T (s)	<input type="text"/>	<input type="checkbox"/>
- Point of the trajectory:**

Point of the trajectory	
x	x2:
y	Vy2:
Vy	t2:
$ V $	
t	

Accept
- Initial velocity input:**

$V_0$   Accept
- Exit button:** Exit

Once introduced and accepted the two data the rest of parameters of the global movement is calculated: reach, maximum height, time of flight...

The trajectory also appears and the chart of values is activated for points of the trajectory.

## 2. Calculation of points

Now you can introduce a data to obtain the rest of variables for the related point (or points)

Results can be saved in a text file (if it already exists, they will be added to it, and if not, the file will be created)



