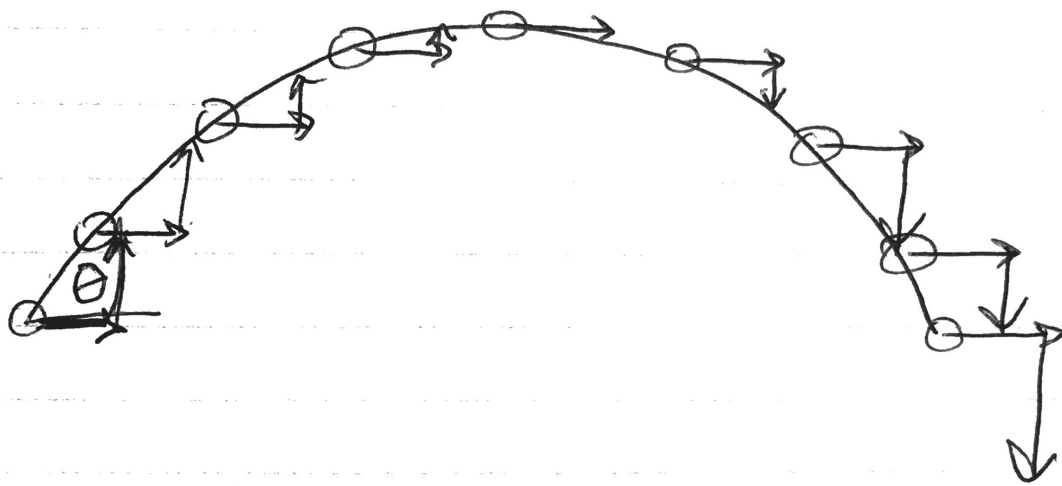


## 2D Projectile Motion

### Projectile launched at an angle

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$\theta$  = theta  $\rightarrow$  the angle at which the projectile was launched above the ground.



Horizontally  $\rightarrow$  the projectile remains in a constant velocity.

Vertically  $\rightarrow$  the projectile is effected by gravity, so the lines get shorter as it goes up, & longer as it comes down.

The projectile is moving the slowest at the top of its path. It is not  $0 \text{ m/s}$  at the top of its path because it still has a constant horizontal velocity.

To find the initial horizontal velocity

$$\star V_x = v_i \cos \theta$$

To find the initial vertical velocity

$$\star V_y = v_i \sin \theta$$

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