

A stick is thrown in the air and lands at some distance from the thrower. The **centre of mass** of the stick will move along a parabolic path

- (a) in all cases
- (b) only if the stick is uniform
- (c) only if the stick does not have any rotational motion
- (d) only if the centre of mass of the stick lies at some point on it and not outside it

We may consider the entire mass of the stick to be concentrated as a point mass at the centre of mass of the stick. As the centre of mass moves as a projectile, it will move along a parabolic path.