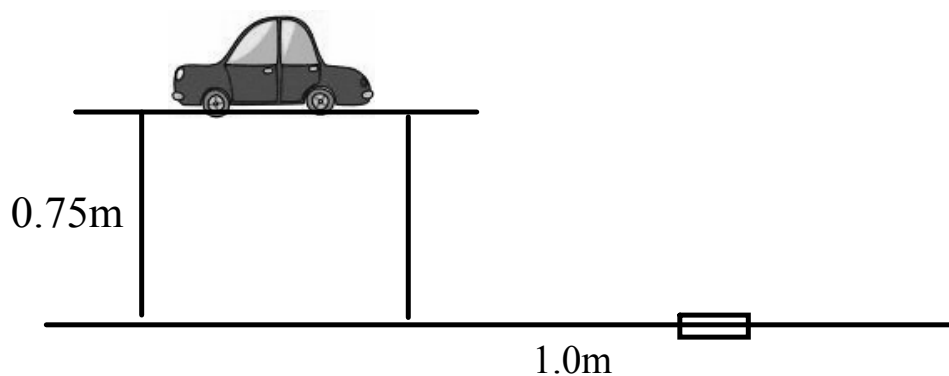


## Targets...

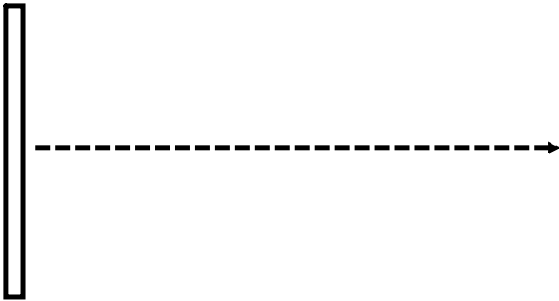
In a laboratory activity, students launch a toy car horizontally off a table with a speed of  $3.6 \text{ m/s}$  as shown. If a  $0.25 \text{ m}$  wide target is placed  $1.0 \text{ m}$  from the base of the table, determine whether the car will hit the target.



Value

3% 51.(a) A juggler throws a ball upward at an angle of  $65^\circ$  to the horizontal, with an initial speed of  $3.2 \text{ m/s}$ . How far apart should the juggler hold her hands in order to catch the ball at the same level from which it was thrown?

3% (b) In the diagram below a dart that is in line with the midpoint of a 0.26 m high target, is thrown toward the target with a speed of 6.0 m/s at a  $30.0^\circ$  angle. Determine whether the dart will hit the target if it is 3.0 m away.



A strike in baseball occurs between 0.50m and 1.0m directly above home plate. A pitcher, 18.0m from home plate, throws a ball with an initial velocity of 17.0 m/s at  $15^\circ$  above the horizontal.

If the ball is released 2.0m above the ground, will the pitch be a strike?

## Juggling STSE