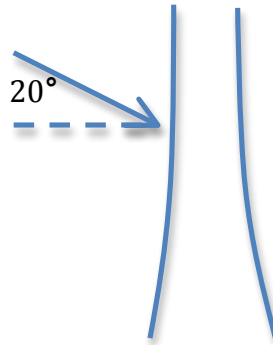


## Projectile Motion Review

1. A car driving 40 m/s goes off a cliff of height 60 m.
  - a. Find speed when it hits the ground?
  - b. How far from the base of the cliff does the car land?
2. An arrow is fired off a 40 m tall cliff with a speed of 49 m/s and an angle of  $30^\circ$ .
  - a. Find speed after 2 sec.
  - b. Find speed after 4 sec.
  - c. Find x and y position after 3 sec.
  - d. Find range.
  - e. With what speed does it hit the ground?
3. At the max height of its trajectory, a projectile has a speed of 10 m/s and a height of 60 m.
  - a. Find the launch angle.
  - b. Find the x distance when the height is 30 m.
4. An arrow is fired at a tree and an angle of  $30^\circ$  and a speed of 40 m/s. If the arrow sticks in the tree as shown, how far away is the tree?



5. A football is kicked at an angle of  $45^\circ$  and lands 55 m away. Find the launch speed.