

3. A projectile is fired to the east from the top of a cliff at coordinates $(5, 15, 200)$ at an angle of 20° . If it hits a target on the ground at $(x, y) = (450, 15)$, and all distances are in feet, what was the initial speed of the projectile? Be sure to make your coordinate system clear.

4. A gun is mounted 20 centimeters above the ground and has a muzzle speed of 120 m/s . Find two angles of elevation that can be used to hit a target that is 500 meters away.