

# Linear Motion Problems

December 13, 2020

1. If a bullet is fired upwards from ground level at  $500\text{m/s}$  how long will it take to hit the ground? What assumptions have you made for this calculation?
2. If a football is kicked with a horizontal velocity of  $12\text{m/s}$  and a vertical velocity of  $5\text{m/s}$  how far away will it land and for how long will it be in flight?
3. In the previous question what was the ball's starting speed and starting direction measured in degrees from vertical?