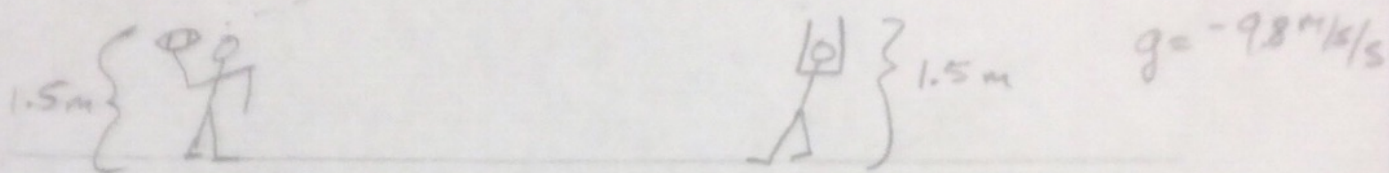


Football Pass

A quarterback throws a pass to his receiver.



The ball leaves the quarterback's hand at an angle of 45° traveling with an initial velocity of 40 m/s .

1. Draw and calculate the V_x and V_y components of the initial velocity.
2. How much time does the ball spend in the air?
Assume the receiver catches the ball at the same height it was thrown.
3. How far did the ball travel horizontally?
4. What was the maximum height reached by the ball?
5. IF the receiver does not catch the ball and it instead hits the ground, determine the following
 - a.) time in the air
 - b.) Horizontal distance traveled.
 - c.) Impact velocity of the ball.