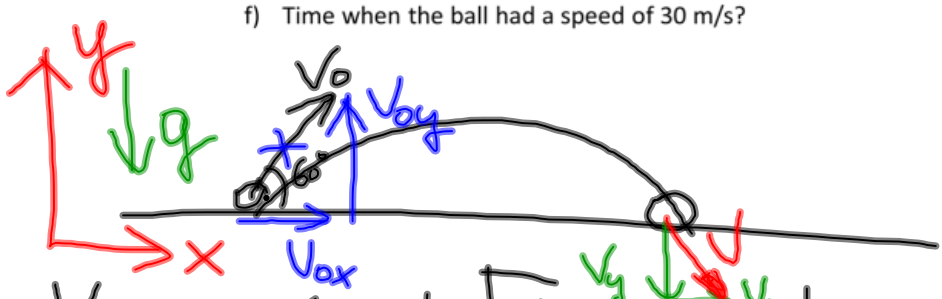
Ex.1

A ball is kicked with a speed of 40 m/s at an angle of 60° above the horizontal on a flat horizontal field. Find the following.

a) Range of the ball?
b) Hang time of the ball?
c) It's final velocity just before it hit the ground?
d) Max. height above the field?
e) Time to reach the max. height?
f) Time when the ball had a speed of 30 m/s?



$V_{ox} = 40(\cos 60°)$ $\quad V_{ox} = 20.0 \frac{m}{s}$

$V_{oy} = 40(\sin 60°)$ $\quad V_{oy} = 34.6 \frac{m}{s}$

Oct 30-9:47 AM

(x)

$a_x = 0$

$V_{ox} = 20.0 \frac{m}{s}$

$V_x = 20.0 \frac{m}{s}$

$\Delta x = ?$

$t = ?$

(y)

$g = -9.8 \frac{m}{s^2}$

$V_{oy} = 34.4 \frac{m}{s}$

$V_y = -34.4 \frac{m}{s}$

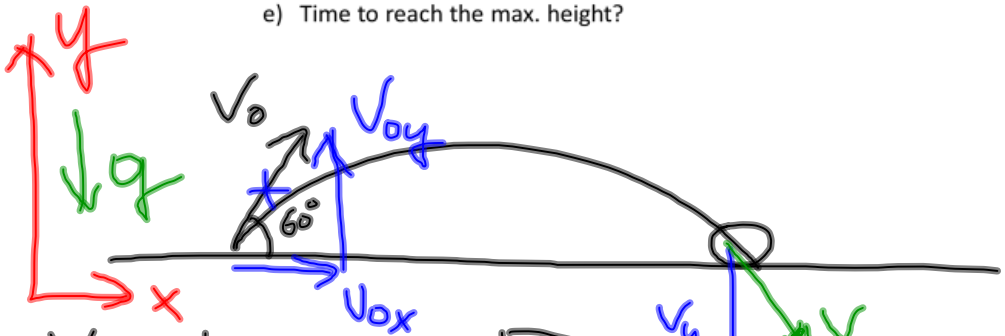
$\Delta y = 0$

$t = ?$

Oct 30-9:53 AM

Ex.1
A ball is kicked with a speed of 40 m/s at an angle of 60° above the horizontal on a flat horizontal field. Find the following.

a) Horizontal range of the ball?
b) Total time in the air of the ball?
c) It's final velocity just before it hit the ground?
d) Max. height above the field?
e) Time to reach the max. height?



$V_{ox} = 40 \cdot \cos(60°)$

$V_{oy} = 40 \cdot \sin(60°)$

$V_{ox} = 20.0 \frac{m}{s}$

$V_{oy} = 34.6 \frac{m}{s}$

Oct 30-12:53 PM

(x)

$a_x = 0$

$V_{ox} = 20.0 \frac{m}{s}$

$V_x = 20.0 \frac{m}{s}$

(y)

Oct 30-1:02 PM