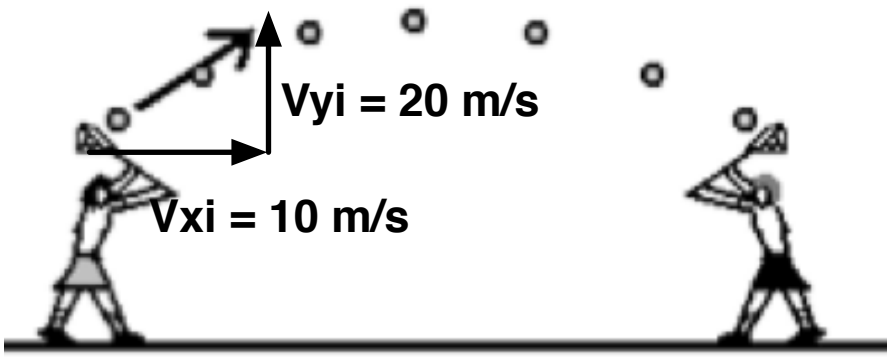
Dx = (Vxi)(t)

Vy = Vyi - 10t



a) Find the time to get to the top.
b) Find the time to go all the way.
c) Find Dx (the range of the projectile).

Start with the Vy equation.
Plug in Vyi

$Vy = (20) - 10t$

At the top of the trajectory, Vy = 0
Plug in and solve for time.

$0 = (20) - 10t$ *Subtract the 20 to the other side.*
$-20 \quad -20$

$-20 = -10t$

$\frac{-20}{-10} = \frac{-10t}{-10}$ *Divide the -10 to the other side.*

$2 \text{ sec} = t$ *This is the time to the top. Double it to get the whole time.*

Now plug in the doubled time to the Dx equation along with the Vxi

$Dx = (10)(4)$

$Dx = 40 \text{ meters}$