

(4)

p 112 MC 4, 6, 8  
p 117 Problem 69

(4 pts)

## - Multiple Choice

4) Ball 1 throw horizontally  
Ball 2 drop

Which reaches  
ground first  
+ why?

Neither - vertical info same  
so same time

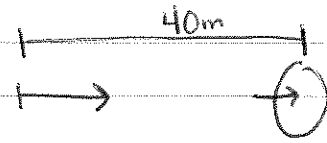
6) Projectile launched at  $v_0$  from angle  $\theta$   
What frame only move vertically?

• Frame move horizontally at  $v_0 \cos \theta$

8) Running, how throw ball to catch it?

• Straight up (It will move forward  
at your speed)

## - Problems

69)   $v_{ox} = 40 \text{ m/s}$       Aim at arrow  
 $x = 40 \text{ m}$

$$\textcircled{1} \quad t = \frac{d}{v} = \frac{40 \text{ m}}{40 \text{ m/s}} = 1 \text{ s}$$

$$\textcircled{2} \quad y = \frac{1}{2} a t^2 = \frac{1}{2} (9.81 \text{ m/s}^2) (1 \text{ s})^2 = 4.9 \text{ m}$$

~~4.9 m~~