

Warm-up:

Describe the motion needed for the following sets of graphs:

Position vs. Time



Stand Still

Velocity vs. Time



Travel at
Constant Velocity

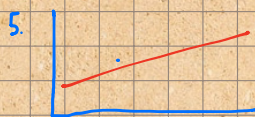
Acceleration vs. Time



not moving or Constant Velocity



moving toward origin
@ Constant Velocity



constant acceleration



Constant acceleration

• Motion of Free Fall:

↳ Natural Motion: an object falls towards the center of the earth

↳ Why do objects fall if there is no apparent vertical force?

★ Gravity causes objects to undergo natural motion

• Free Fall: where the only force on an object is gravity

↳ Ignore air resistance!

★ Feather vs. Hammer

HW: End of chapter problems 8, 34, 41

8. What two controls on a car cause a change in speed? What control causes only a change in velocity? (2.3)

34. Why is it that an object can accelerate while traveling at constant speed, but not at constant velocity?

41. A ball is thrown straight up. What will be the instantaneous velocity at the top of its path? What will be its acceleration at the top? Why are your answers different?