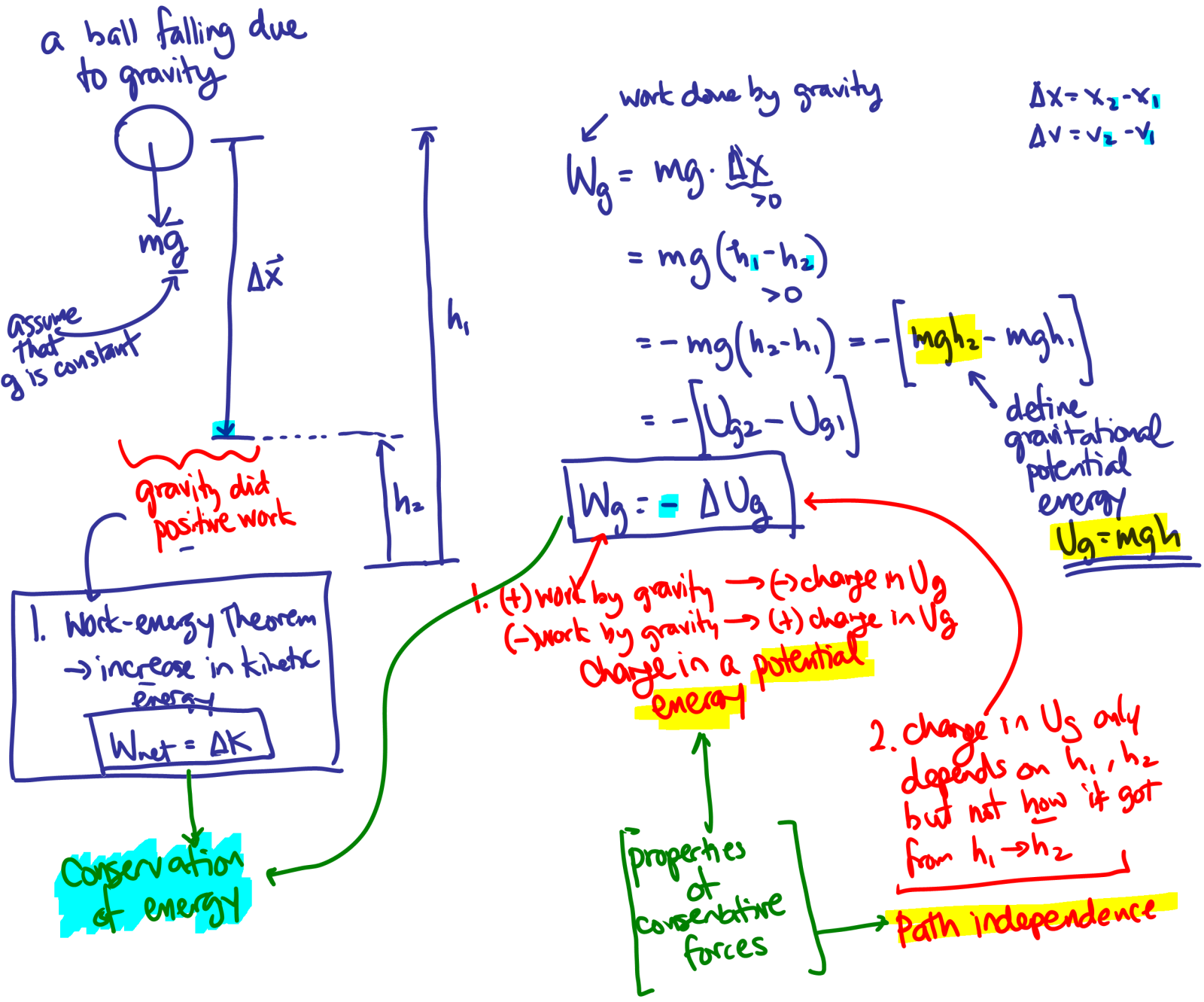
a ball falling due to gravity
mg
assume that g is constant
Δx
h1
h2
gravity did positive work
1. Work-energy Theorem
→ increase in kinetic energy
Wnet = ΔK
Conservation of energy
work done by gravity
Wg = mg · Δx
>0
= mg(h1 - h2)
>0
= -mg(h2 - h1) = -[mgh2 - mgh1]
= -[Ug2 - Ug1]
define gravitational potential energy
Ug = mgh
Wg = - ΔUg
1. (+) work by gravity → (-) change in Ug
(-) work by gravity → (+) change in Ug
Change in a potential energy
2. change in Ug only depends on h1, h2 but not how it got from h1 → h2
properties of conservative forces
path independence
Δx = x2 - x1
Δv = v2 - v1