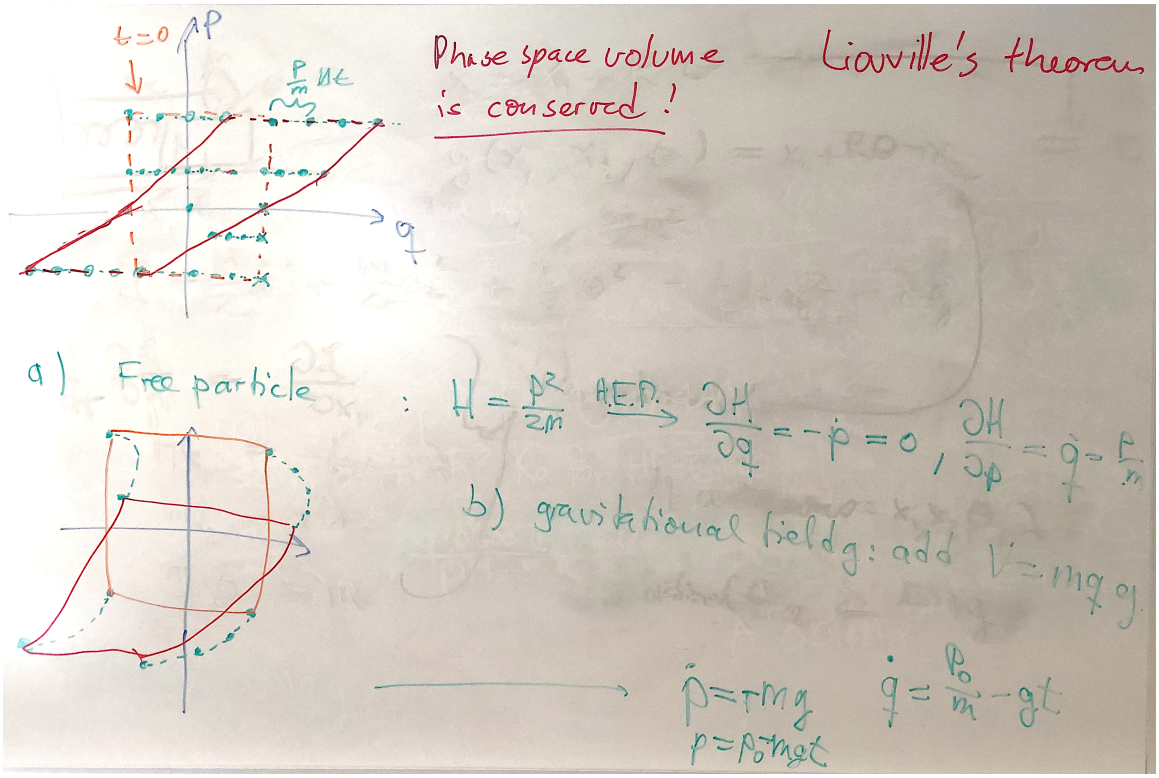
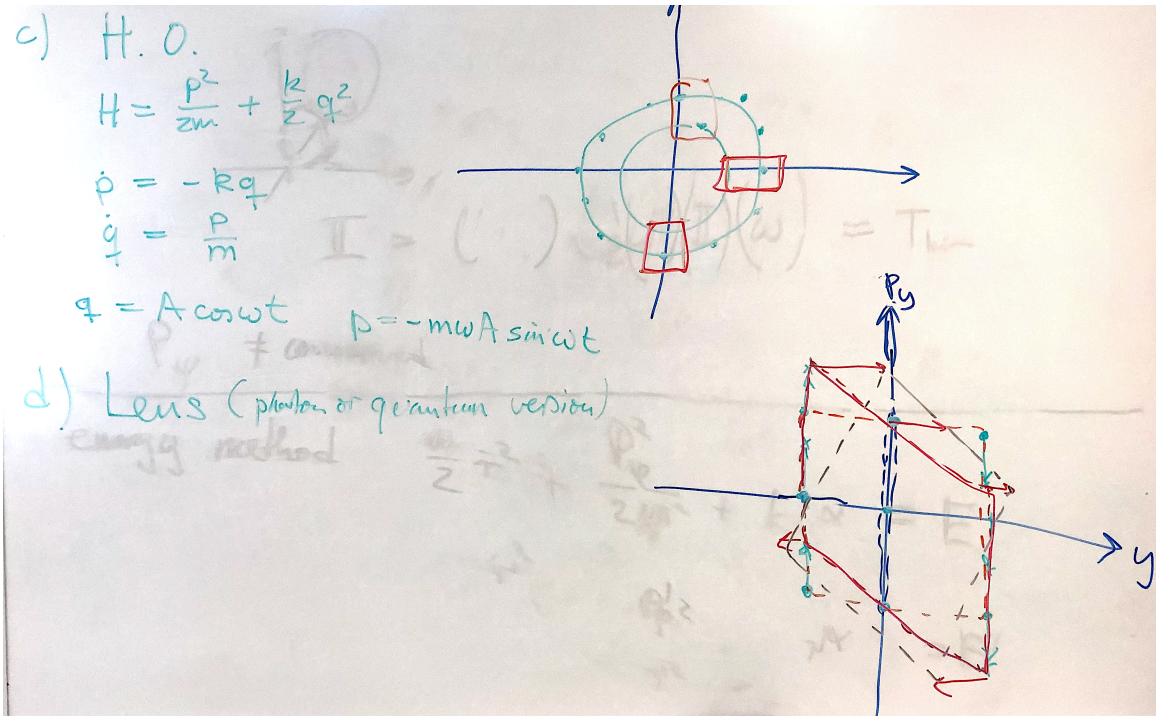
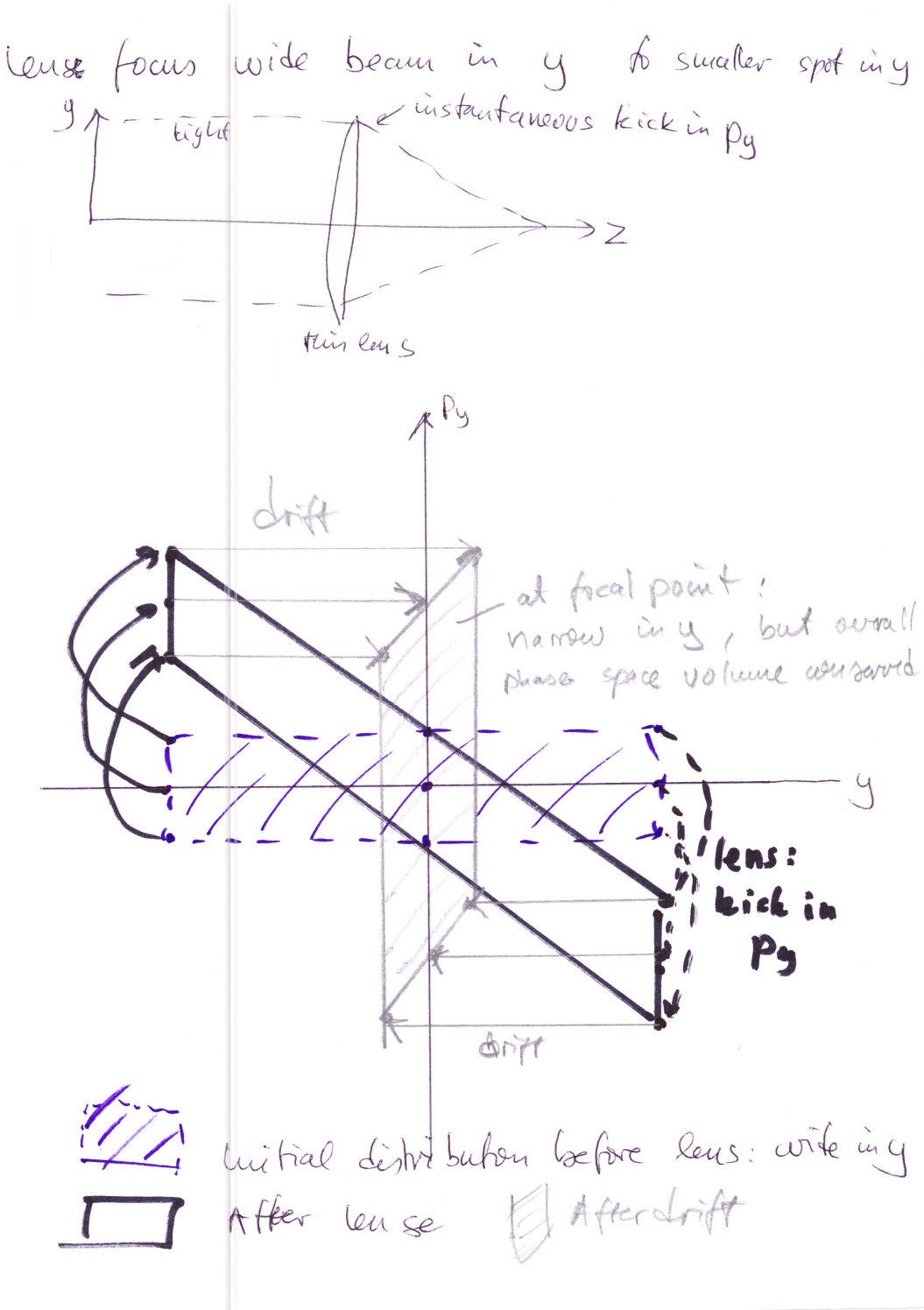




Here is a better picture for the lens case:


lense focus wide beam in y to smaller spot in y
y
tight
instantaneous kick in p_y
z
thin lens
p_y
drift
at focal point:
narrow in y, but overall
phase space volume conserved
y
lens:
kick in
p_y
drift
initial distribution before lens: wide in y
After lense
Afterdrift

Liouville's Theorem: