

Precept — week 2

Total differential: $df(x, y) = \frac{\partial f(x, y)}{\partial x} dx + \frac{\partial f(x, y)}{\partial y} dy$

In part 1(a), derive an implicit equation of the form $f(h, t, \tau) = 0$.

Then explore how a change in t or τ affects f . $0 = \frac{\partial f}{\partial h} dh + \frac{\partial f}{\partial t} dt + \frac{\partial f}{\partial \tau} d\tau$

But WLOG we hold τ constant and solve for $\frac{dh}{dt} = -\frac{\frac{\partial f}{\partial t}}{\frac{\partial f}{\partial h}}$ and evaluate. Can also use implicit function theorem.