I updated the firm’s problem on slide 8. Normally you write the firms profits as

With perfect competition so we do not worry about the price. I checked the answer for k\*, which you get as follows. Start with

A math equations with numbers and symbols

Description automatically generated

Taking the steady state

Then you use the definition

A black and white math symbol

Description automatically generated with medium confidence

Plugging in and rearranging

So finally,

This equation tells you that equilibrium capital increases with productivity (A) and decreases with the equilibrium real interest rate or depreciation (δ) rate.