

# Intermediate Macroeconomics

## Mathematical "tricks"

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1. Percentage change in  $(X*Y)$

$$\% \Delta(XY) \approx \% \Delta X + \% \Delta Y$$

2. Percentage change in  $(X/Y)$

$$\% \Delta(X/Y) \approx \% \Delta X - \% \Delta Y$$

3. The derivative of a sum is the sum of the derivatives

$$\Delta(X + Y) = \Delta X + \Delta Y$$

4. The product rule

$$\Delta(XY) = (\Delta X)Y + (X)\Delta Y$$