

Week 1 summary:

- In many real-world situations, there are simple relations between a function and its derivatives. These can be expressed as differential equations.

- Exponential growth: $y' = ky$
- Exponential decay: $y' = -ky$
- Decay \rightarrow value: $y' = k(A - y)$.

- Slope fields: A way to "visualize" all solutions to an ODE. We can sketch a slope field using isoclines (not in textbook!)
 Set $y' = \text{const}$, plot the resulting line/curve.

- Plotting solutions to autonomous ODEs; $y' = f(y)$.