Week 8 summary:

- Phase portraits plotting $x_1$ vs. $x_2$, where $\dot{x} = (x_2)$ solves $\dot{x} = A x$.
  The "eigenvector lines" contain straight line solutions.

$\lambda_{1,2}$ distinct, real:

- $\lambda_1 > \lambda_2 > 0$
- $\lambda_1 < \lambda_2 < 0$
- $\lambda_1 < 0 < \lambda_2$

$\lambda_{1,2} = \alpha \pm \beta i$ (complex):

- $\alpha > 0$ (outward spirals)
- $\alpha < 0$ (inward spirals)
- $\alpha = 0$ (ellipses)