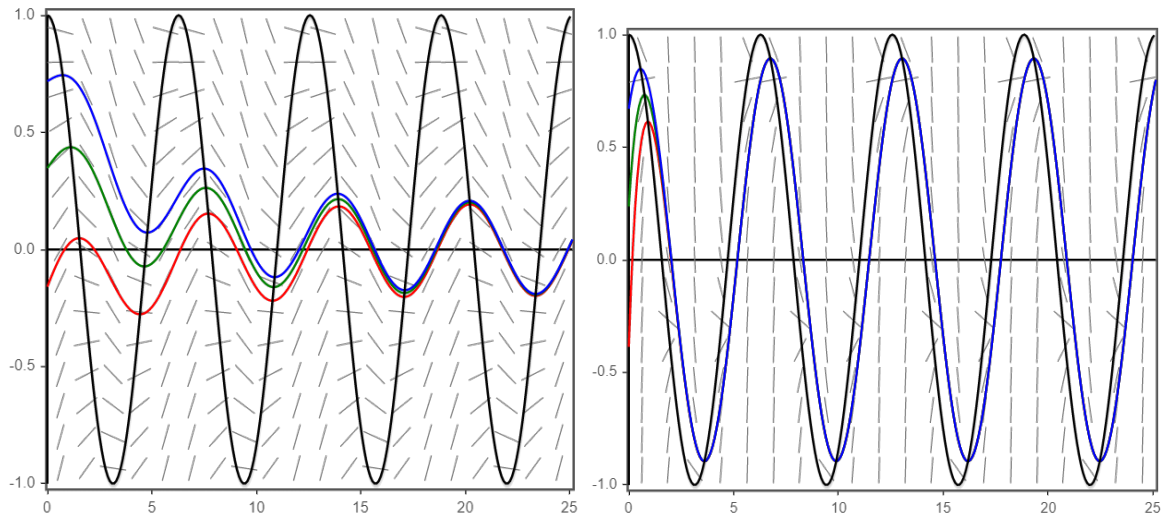


This is an example of a figure caption.



Solutions to Newton's Law of Cooling with an oscillating ambient temperature. The original ODE is  $\frac{dx}{dt} = -k(x - (A + B \cos(\omega t)))$ , where  $k$  is the decay constant of the object with temperature  $x(t)$ , and  $T(t) = A + B \cos(\omega t)$  is the ambient temperature. The dimensionless ODE is  $\frac{d\bar{x}}{d\bar{t}} = -K(\bar{x} - \cos(\bar{t}))$ , where  $\bar{x} = (x - A)/B$  and  $\bar{t} = \omega t$ . The dimensionless parameter is  $K := k/\omega$ , the decay rate of the object divided by the frequency of the ambient temperature. The scaled temperature  $\bar{x}$  is the dimensionless deviation of the temperature from the average ambient temperature. The scaled ambient temperature has average 0, period  $2\pi$ , and amplitude 1, as represented by the black curve. The other curves are solutions to the dimensionless ODE with  $K = 0.2$  on the left, and  $K = 2$  on the right. For small  $K$ , the amplitude of the steady-state solution is small, and the temperature of the object lags the ambient temperature by about  $1/4$  period. For large  $K$ , the temperature of the object is very close to the ambient temperature.