Focus Boxes and Equations

This is a x- and y-centerd **green focusbox** with 60% width and an unnumbered equation:

$$f(x) = x^2 + 2x + 1$$

We can add some vertical space between elements using the `#v()` command:

This is a **red focusbox** with a numbered equation and larger text.

$$\int_0^\infty e^{-x^2} \, \mathrm{d}x = \frac{\sqrt{\pi}}{2} \qquad (1)$$

Focusbox configuration

The focusbox has several options:

- bg: - Background color (blue, red, green, cyan, magenta, yellow, gray, white)
- text-size: Font size (e.g., 0.8em, 1.2em)
- center_x: Horizontal centering (true/false)
- center_y: Vertical centering (true/false)
- width: Box width (e.g., 80%, 100%, auto)

We can also use the `#pause` marker to create animated subslides within a slide.

The `#slide` function has these options:

- `headercolor`: Background color (blue, red, green, cyan, magenta, yellow, gray, white) - default: blue
- `title`: Slide title text - default: none
- `center_x`: Horizontal centering (true/false) - default: false
- `center_y`: Vertical centering (true/false) - default: true
- `slide-main-font`: Override main font for this slide only - default: none
- `slide-main-font-size`: Override main font size for this slide - default: none
- `slide-code-font`: Override code font for this slide - default: none
- `slide-code-font-size`: Override code font size for this slide - default: none
- `slide-equation-numbering`: Turn equation numbering on/off for this slide (auto/true/false) - default: auto
- `repeat`: Number of animation subslides (auto = auto-detect from `#pause` markers) - default: auto

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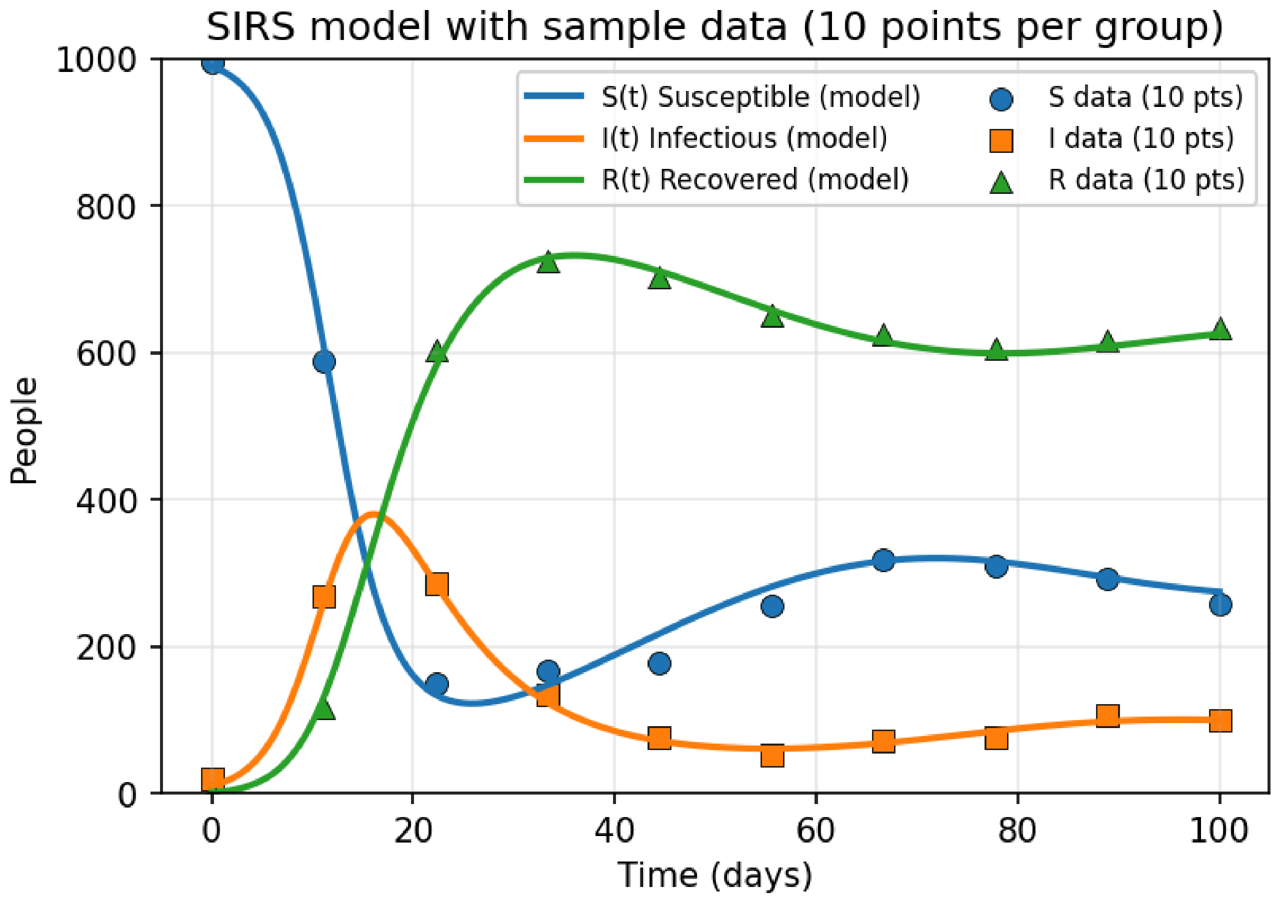
Day	Susceptible S	Infectious I	Recovered R
0	990	10	0
2	950	35	15
4	880	75	45
6	780	120	100
8	650	155	195
10	520	175	305
12	400	180	420
14	300	165	535



Python Code

We can embedd Python code for the simulation of an SIRS epidemiological model, using typst built-in code blocks:

```python
import numpy as np

def sirs(N, beta, gamma, xi, I0, R0, days, dt):
    t = np.linspace(0, days, int(days/dt) + 1)
    S = np.zeros_like(t); I = np.zeros_like(t); R = np.zeros_like(t)
    S[0] = N - I0 - R0; I[0] = I0; R[0] = R0

    for k in range(len(t) - 1):
        dS = -beta*S[k]*I[k]/N + xi*R[k]
        dI =  beta*S[k]*I[k]/N - gamma*I[k]
        dR =  gamma*I[k] - xi*R[k]
        S[k+1] = S[k] + dt*dS
        I[k+1] = I[k] + dt*dI
        R[k+1] = R[k] + dt*dR

    return t, S, I, R
```

We can model the motion of a simple harmonic oscillator using the following equation:

$$x(t) = A\sin(\omega t - \varphi) \tag{1}$$

Where:

- A is the amplitude
- ω is the angular frequency
- φ is the phase offset

Total Energy: The total mechanical energy E is the sum of kinetic and potential energy:

$$E = K + U = \frac{1}{2}mv^2 + \frac{1}{2}kx^2 \tag{2}$$

Substituting $v(t) = \dot{x}(t)$ and using $k = m\omega^2$:

$$\begin{aligned} E &= \frac{1}{2}m(A\omega\cos(\omega t))^2 + \frac{1}{2}(m\omega^2)(A\sin(\omega t))^2 \\ &= \frac{1}{2}m\omega^2 A^2(\cos^2(\omega t) + \sin^2(\omega t)) \\ &= \frac{1}{2}kA^2 \end{aligned} \tag{3}$$