

$$ax^2 + bx + c = 0$$

$$x^2 + \frac{b}{a}x + \frac{c}{a} = 0$$

$$x_{1/2} = \frac{b}{2a} \pm \sqrt{\left(\frac{b}{2a}\right)^2 - \frac{c}{a}}$$

$$\frac{b^2}{4a^2} - \frac{c}{a} = 0 \quad \leadsto \quad b = \sqrt{4 \cdot ca}$$

$$F(s) = \frac{k}{Ts^2 + s + k} = \frac{1}{1 + \frac{1}{k}s + \frac{T}{k}s^2}$$

$$\text{d.h. } \left. \begin{array}{l} c = 1 \\ b = 1/k \\ a = T/k \end{array} \right\}$$

$$\frac{1}{k} = \sqrt{4 \cdot \frac{T}{k}} \quad \leadsto \quad \underline{\underline{k = \frac{1}{4T}}}$$