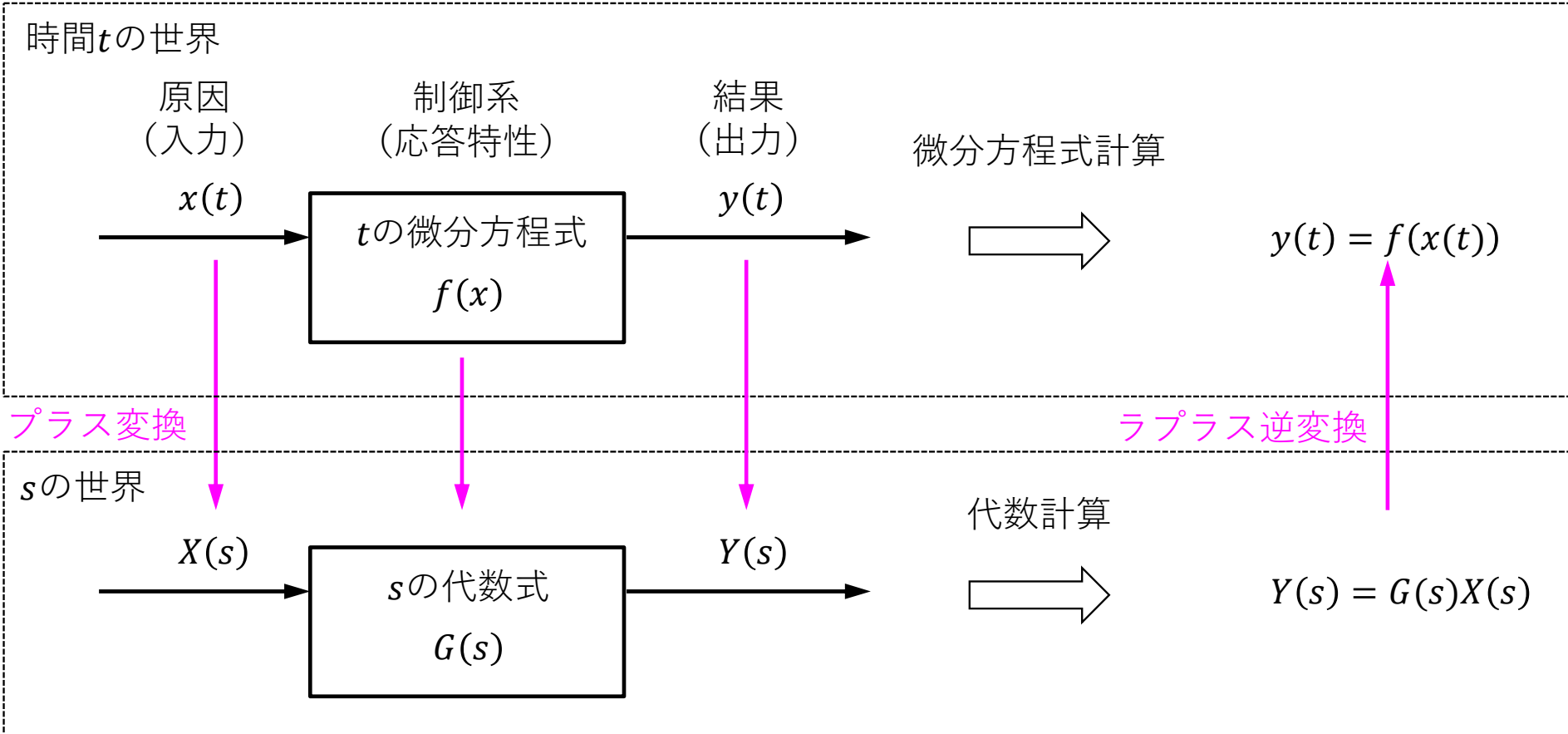
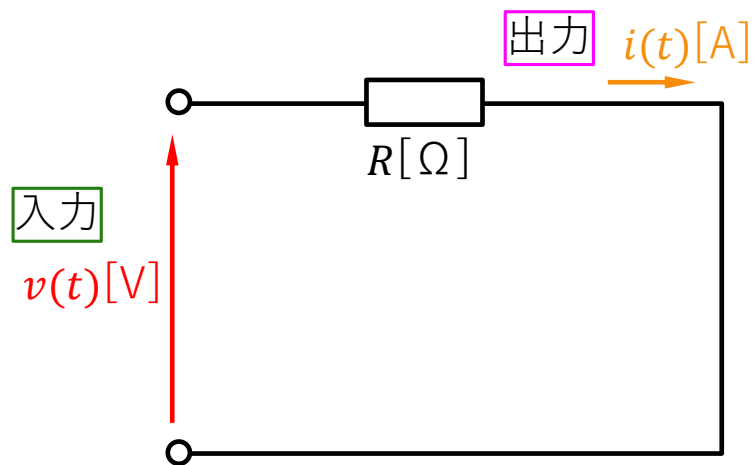
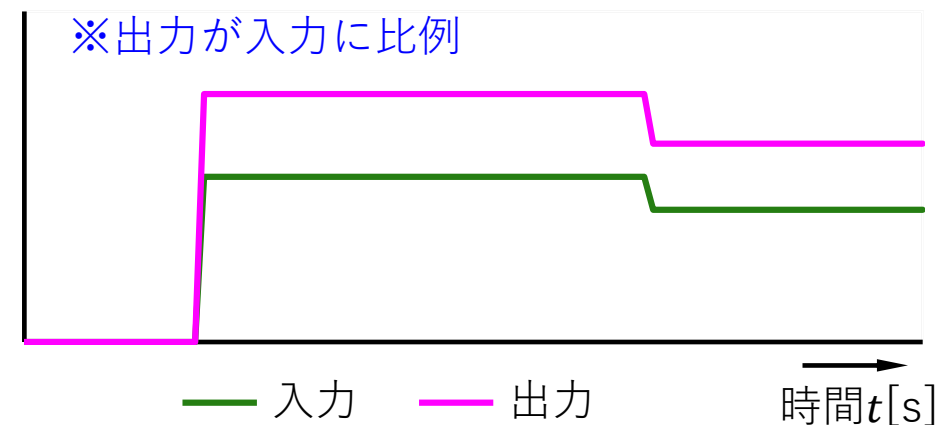
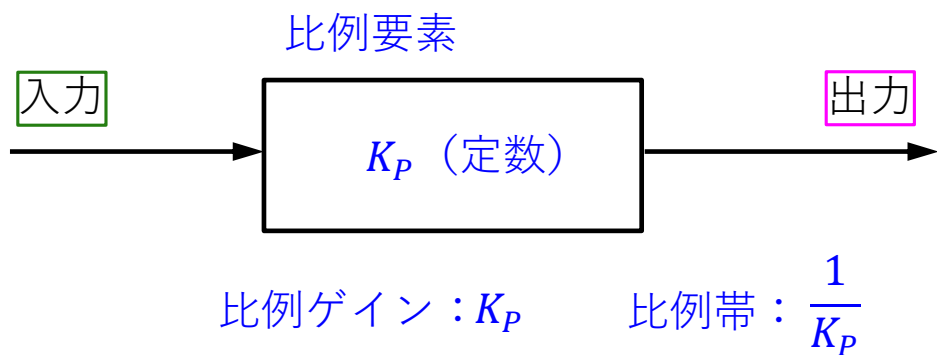


制御 (6) 《伝達関数》



伝達関数 :  $G(s) = \frac{\text{出力}}{\text{入力}} = \frac{Y(s)}{X(s)}$

制御 (7) 《伝達関数要素：比例》



$$i(t) = \frac{v(t)}{R} \dots \textcircled{1}$$

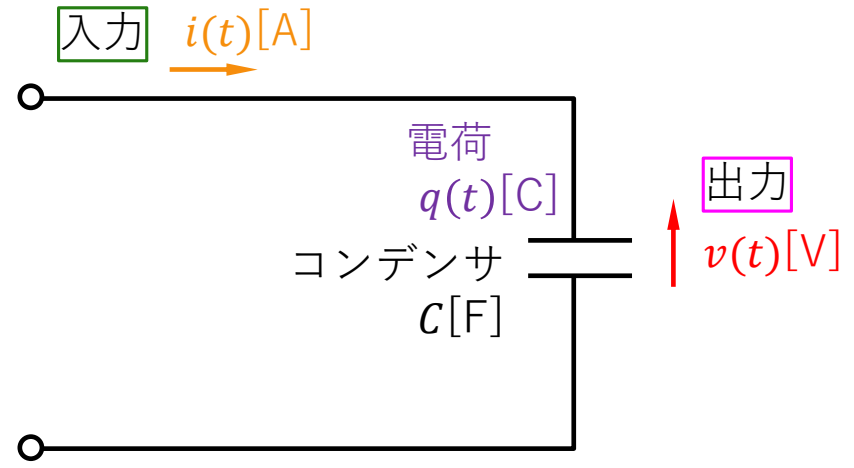
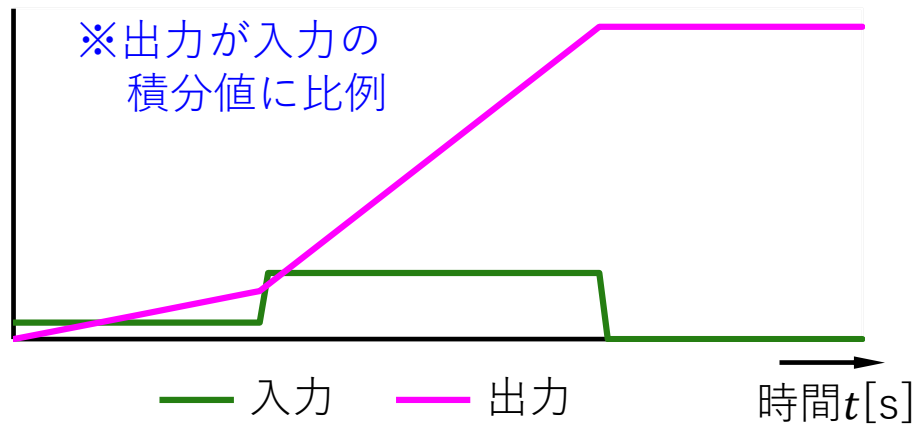
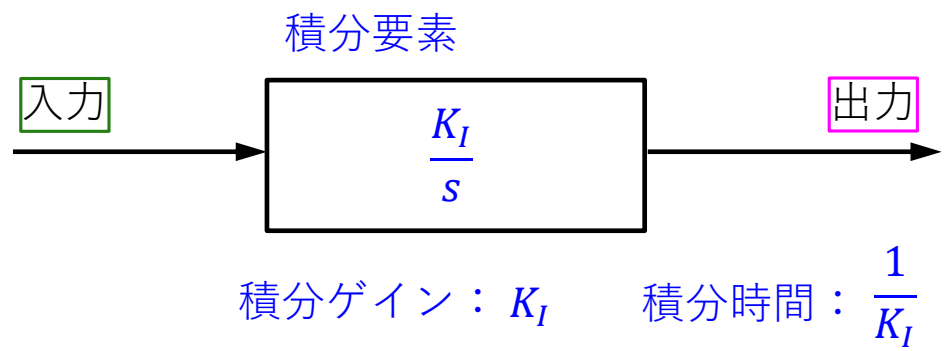
①をラプラス変換すると、

$$I(s) = \frac{1}{R}V(s)$$

$$\therefore G(s) = \frac{\text{出力}}{\text{入力}} = \frac{I(s)}{V(s)} = \frac{1}{R}$$

$$\text{比例ゲイン：}\frac{1}{R} \quad \text{比例帯：}R$$

制御 (8) 《伝達関数要素：積分》



$$q(t) = \int i(t)dt \text{ より } v(t) = \frac{q(t)}{C} = \frac{1}{C} \int i(t)dt \dots \textcircled{1}$$

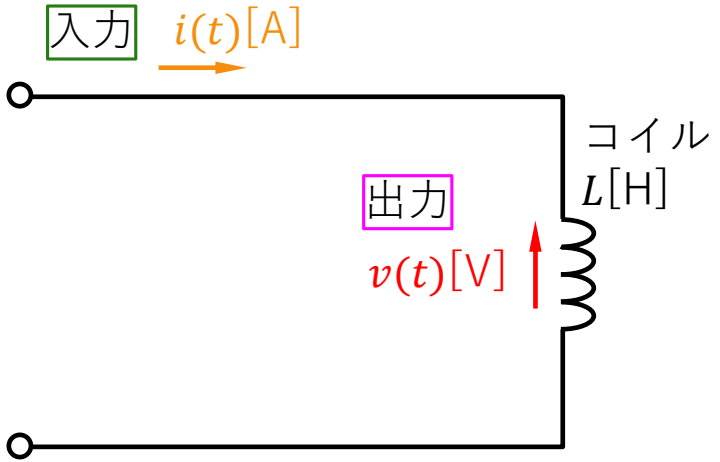
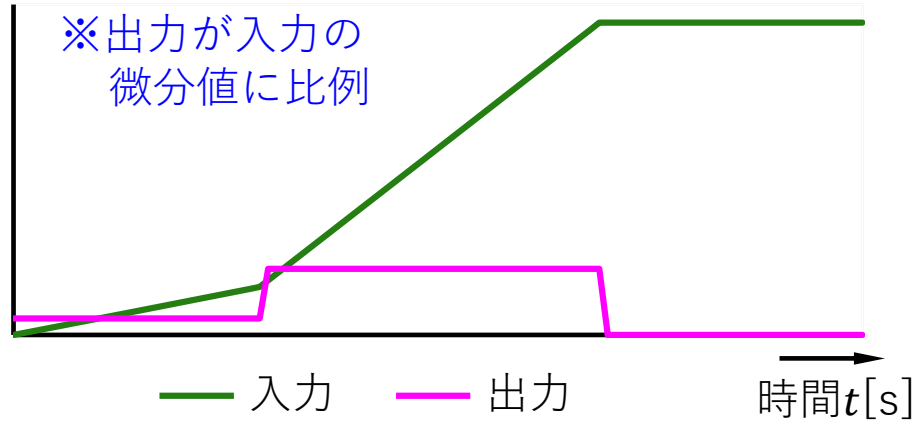
①をラプラス変換すると、

$$V(s) = \frac{1}{C} \cdot \frac{I(s)}{s}$$

$$\therefore G(s) = \frac{\text{出力}}{\text{入力}} = \frac{V(s)}{I(s)} = \frac{1}{Cs}$$

積分ゲイン：  $\frac{1}{C}$       積分時間：  $C$

制御 (9) 《伝達関数要素：微分》



$$v(t) = L \frac{di(t)}{dt} \quad \dots \textcircled{1}$$

①をラプラス変換すると、

$$V(s) = L \cdot sI(s)$$

$$\therefore G(s) = \frac{\text{出力}}{\text{入力}} = \frac{V(s)}{I(s)} = Ls$$

微分ゲイン (微分時間) : L