

B2-2

$$(a) \quad k = \frac{0.6}{0.4} \text{ or } \frac{0.4}{0.6}$$

$$= 1.5 \quad = 0.67$$

$$(b) \quad Q_N = E \cdot G_c \cdot G_p + D, \quad E = Q_N \cdot k - Q_N$$

$$(c) \quad Q_N = (Q_N \cdot k - Q_N) E G_c G_p \quad (d) \text{ 一次遅滞系,}$$

$$\frac{Q_N}{Q_A} = G = \frac{k G_c G_p}{1 + G_c G_p} \quad (e) \text{ 時定数,}$$

(f) 比値,

$$(g)(h) \quad G_o = k_p, \quad G_p = \frac{k_i}{1+Ts}$$

$$\frac{Q_N}{Q_A} = \frac{k \cdot k_p \frac{k_i}{1+Ts}}{1 + k_p \frac{k_i}{1+Ts}} = \frac{k k_p k_i}{Ts + 1 + k_p k_i}$$

$$= \frac{\frac{k k_p}{k_p k_i + 1} \cdot k_i}{Ts + 1 + 1}$$

$$= \frac{1}{k_p k_i + 1} + 1$$

$$(g) \quad \frac{1}{k_p k_i + 1} \text{ 倍}$$

$$(h) \quad \frac{k k_p}{k_p k_i + 1} \text{ 倍}$$