(04) $s = \frac{2}{T}\left(\frac{z-1}{z+1}\right)$

$$C(z) = k_p + \frac{k_i T(z+1)}{2(z-1)} = \frac{U(z)}{E(z)}$$

$$U(z)(2z-2) = E(z)(2zk_p - 2k_p + k_i T z + k_i T)$$

$$U(z)\cdot(2z-2) = E(z)\left((2k_p + k_i T)z + (-2k_p + k_i T)\right)$$

$$U(z)(2 - 2z^{-1}) = E(z)\left((2k_p + k_i T) + (-2k_p + k_i T)z^{-1}\right)$$

$$2u[k] - 2u[k-1] = (2k_p + k_i T)e[k] + (-2k_p + k_i T)e[k-1]$$

$$u[k] = u[k-1] + \left(k_p + \frac{k_i T}{2}\right)e[k] + \left(-k_p + \frac{k_i T}{2}\right)e[k-1]$$