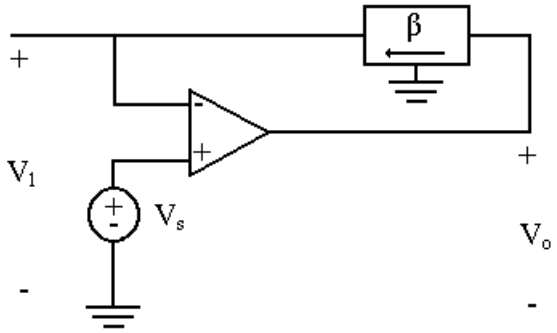
2.55



(α)
Αν A = ∞:
Είναι $V_1 = V_s$ και $V_1 = \beta V_o$ άρα:

$$\beta V_o = V_s \Leftrightarrow \frac{V_o}{V_s} = \frac{1}{\beta} \tag{1}$$

(β)
Αν A πεπερασμένο:
Είναι $V_1 = V_s - V_o/A$ και $V_1 = \beta V_o$ άρα:

$$\beta V_o = V_s - \frac{V_o}{A} \Rightarrow \left(\beta + \frac{1}{A}\right) V_o = V_s \Rightarrow \frac{V_o}{V_s} = \frac{1}{\beta + \frac{1}{A}} = \frac{A}{1 + A\beta} \tag{2}$$

(γ)
Αν $A \cong \omega_t/s$:
Είναι:

$$\frac{V_o}{V_s} = \frac{1}{\beta + \frac{s}{\omega_t}} = \frac{1/\beta}{1 + \frac{s}{\beta\omega_t}} \tag{3}$$

Άρα προκύπτει ότι $\omega_{3dB} = \beta\omega_t$.