

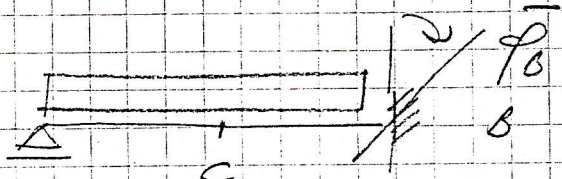
$$C_1 = -\frac{3}{\rho^3} \left(\bar{V}_B + \frac{q \rho^4}{2EI} \right) = -\frac{3\bar{V}_B}{\rho^3} - \frac{3q\rho}{2EI} \quad (6)$$

$$C_3 = \frac{3\bar{V}_B}{2\rho} + \frac{3q\rho^3}{4EI} - \frac{q\rho^3}{EI} = \frac{3\bar{V}_B}{2\rho} - \frac{q\rho^3}{4EI}$$

$$v(z) = \left(-\frac{3\bar{V}_B}{\rho^3} - \frac{3q\rho}{2EI} \right) \frac{z^3}{6} + \frac{q\rho^2}{EI} \frac{z^2}{2} + \left(\frac{3\bar{V}_B}{2\rho} - \frac{q\rho^3}{4EI} \right) z$$

$$z = \rho/2 \rightarrow v = -\frac{3\bar{V}_B}{\rho^3} \frac{\rho^3}{48} - \frac{3q\rho^4}{96EI} + \frac{q\rho^4}{8EI} + \frac{3\bar{V}_B}{4} - \frac{q\rho^4}{8EI}$$

$$= \frac{11}{16} \bar{V}_B - \frac{q\rho^4}{32EI}$$

2. B)  $\frac{d^4 v(z)}{dz^4} = \frac{q}{EI}$

$$\frac{d^3 v(z)}{dz^3} = \frac{q}{EI} z + C_1$$

$$\frac{d^2 v(z)}{dz^2} = \frac{q}{EI} \frac{z^2}{2} + C_1 z + C_2$$

$$\frac{dv}{dz} = \frac{q}{EI} \frac{z^3}{6} + C_1 \frac{z^2}{2} + C_2 z + C_3$$

$$v = \frac{q z^4}{24EI} + C_1 \frac{z^3}{6} + C_2 \frac{z^2}{2} + C_3 z + C_4$$