

B3-2

1) 塔全体への価値収支(円)

$$(y_B - y_T) G_M = (r_B - r_T) L_M$$

$$y_B = \frac{L_M}{G_M} (r_B - r_T) + y_T$$

(a), (b)

$$\uparrow \text{「」} \text{「」} \quad y_B = 0.011 \quad y_T = 0.002$$

$$(c) \text{ 傾斜は } \frac{0.005 - 0.002}{0.001 - 0} = 3 = \frac{L_M}{G_M}$$

$$2) \uparrow \text{「」} \text{「」} \quad r = 0\% \quad \frac{1}{r^* - r} = 550 = \frac{1}{r^*}$$

$$r = 0.003 \quad \frac{1}{r^* - r} = 1100$$

推測は $r^* - r$ で表さずの

$$r = 0\% \quad \frac{1}{r^*} = 550 \quad \text{よって } r^* = 0.001818$$

$$\text{よって (d) } r^* - r = 0.001818$$

$$r = 0.003 \quad \frac{1}{r^* - r} = 1100 \quad \text{(e) } r^* - r = \frac{1}{1100} = 0.00091$$

3) $N_{OL} = \int_0^x \frac{dr}{r^* - r}$ は積分できない。領域を4分割して

$$S_1 = 550 \times 0.001 = 0.55 \quad \leftarrow \text{長方形}$$

$$S_2 = (610 + 570) \times \frac{1}{2} \times 0.0005 = 0.295 \quad \leftarrow \text{台形}$$

$$S_3 = (700 + 610) \times \frac{1}{2} \times 0.0005 = 0.328$$

$$S_4 = (1100 + 700) \times \frac{1}{2} \times 0.001 = 0.9$$

$$\text{よって } S = S_1 + S_2 + S_3 + S_4 = 2.07$$