1. (1) $y_d = y - (t - t_r)$

$$y = C + i + g$$

$$y = 0.8y - 0.8 \times (250 - 62.5) + 100 + 250$$

$$0.2y = 200$$

$$y = 1000$$

(2) $y = \alpha + \beta[y - (t - t_r)] + i + g$

$$(1 - \beta)y = \alpha + i + g - \beta t + \beta t_r$$

$$y = \frac{\alpha + i + g - \beta t + \beta t_r}{1 - \beta}$$

$$k_i = \frac{1}{1 - \beta} = \frac{1}{0.2} = 5$$

$$k_g = \frac{1}{1 - \beta} = 5$$

$$k_t = \frac{-\beta}{1 - \beta} = -4$$

$$k_{t_r} = \frac{\beta}{1 - \beta} = 4$$

$$k_b = 1$$

2. (1) $\Delta y = k_g \Delta g$

$$200 = 5\Delta g$$

$$\Delta g = 40$$

(2) $-\Delta y = k_t \Delta t$

$$-200 = -4\Delta t$$

$$\Delta t = 50$$

(3) $\Delta g = \Delta t$

$$\Delta y = k_g \Delta g + k_t \Delta t$$

$$200 = (k_g + k_t)\Delta y$$

$$\Delta g = \Delta t = 200$$

3. $\Delta y = k_i \Delta i = \frac{1}{0.25} \times 200 = 800$

4. (1) $y_d = y - t$

$$y = C + i + g$$

$$y = 1000 + 0.75(y - 600) + 1550$$

$$0.25y = 2100$$

$$y = 8400$$

$$y_d = y - t = 7800$$

(2) $C = 1000 + 0.75 \times 7800 = 6850$

(3) $t + S = i + g$

$$600 + S = 1550$$

$$S = 950$$

$$S_g = t - g = -150$$

(4) $k_i = \frac{1}{1 - 0.75} = 4$

5.

$$\Delta g = \frac{1}{0.2} \times 300 = 1500$$

$$\Delta t_r = \frac{1-0.2}{0.2} \times 300 = 1200$$

$$\Delta t = -\frac{1-0.2}{0.2} \times 300 = -1200$$

$$\Delta C = 600 + 600 \times (1-0.2) + 600 \times (1-0.2)^2 + \cdots + 600 \times (1-0.2)^n$$

$$= \frac{600(1-0.8^n)}{1-0.8}$$

$$= 3000$$

$$\Delta y = \Delta C - \Delta g - \Delta t_r - \Delta t$$

$$= 3000 - 1500 - 1200 + 1200$$

$$= 1500$$

附加题

1. (1) $y_d = y - t_n$

$$y = C + i + g + nx$$

$$y = 30 + 0.8(y - 50) + 110 + 50 - 0.05y$$

$$0.25y = 150$$

$$y = 600$$

(2) $nx = 50 - 0.05 \times 600 = 20$

(3) $k_i = \frac{1}{1 - 0.8 + 0.05} = 4$

(4) $y' = y + \Delta y = y + k_i \Delta i$

$$= 600 + 4 \times 10$$

$$= 640$$

$$nx = 50 - 0.05 \times 640 = 18$$

(5) $y = C + i + g + nx'$

$$0.25y = 140$$

$$y = 560$$

$$nx' = 40 - 0.05 \times 560 = 12$$