① $X_{11} + X_{21} + X_{31} \geq 3000$

② $X_{12} + X_{22} + X_{32} \geq 2000$

③ $X_{13} + X_{23} + X_{33} \geq 1000$

④ $X_{11} + X_{21} + X_{31} + X_{12} + X_{22} + X_{32} + X_{13} + X_{23} + X_{33} \leq 14000$

⑤ $(12X_{11} + 6X_{21} + 8X_{31}) / (X_{11} + X_{21} + X_{31}) \geq 10$

$(12X_{11} + 6X_{21} + 8X_{31}) - (10X_{11} + 10X_{21} + 10X_{31}) \geq 0$

$= 2X_{11} - 4X_{21} - 2X_{31} \geq 0$

⑥ $(12X_{12} + 6X_{22} + 8X_{32}) / (X_{12} + X_{22} + X_{32}) \geq 0$

$(12X_{12} + 6X_{22} + 8X_{32}) - (8X_{12} + 8X_{22} + 8X_{33}) \geq 0$

$= 4X_{12} - 2X_{22} \geq 0$

⑦ $(12X_{13} + 6X_{23} + 3X_{33}) / (X_{13} + X_{23} + X_{33}) \geq 6$

$(12X_{13} + 6X_{23} + 3X_{33}) - (6X_{13} + 6X_{23} + 6X_{33}) \geq 0$

$= 6X_{13} - 3X_{33} \geq 0$

⑧ $(0.005X_{11} + 0.02X_{21} + 0.03X_{31}) / (X_{11} + X_{21} + X_{31}) \leq 0.01$

$(0.005X_{11} + 0.02X_{21} + 0.03X_{31}) - (0.01X_{11} + 0.01X_{21} + 0.01X_{31}) \leq 0$

$= -0.005X_{11} + 0.01X_{21} + 0.02X_{31} \leq 0$

⑨ $(0.005X_{12} + 0.02X_{22} + 0.03X_{32}) / (X_{12} + X_{22} + X_{32}) \leq 0.02$

$(0.005X_{12} + 0.02X_{22} + 0.03X_{32}) - (0.02X_{12} + 0.02X_{22} + 0.02X_{32})$

$= -0.015X_{12} + 0.01X_{32} \leq 0$

⑩ $(0.005X_{13} + 0.02X_{23} + 0.03X_{33}) / (X_{13} + X_{23} + X_{33}) \leq 0.01$

$(0.005X_{13} + 0.02X_{22} + 0.03X_{32}) - (0.01X_{13} + 0.01X_{23} + 0.01X_{33})$

$= -0.005X_{13} + 0.01X_{23} + 0.02X_{33} \leq 0$

⑪ $X_{ij} \geq 0$

⑫ $o_i \geq 0$