Session 2 Advanced Linear Programming I

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1. Section 3.5 Problem 6

   x_i demostrates the number of police officers who start their job at [12AM, 6AM, 12PM, 6PM] and serve for 12 consecutive hours.
   y_i demostrates the number of police officers who start their job at [12AM, 6AM, 12PM, 6PM] and serve for 16 consecutive hours.

   Objective Function:

$$\min \quad 48(\sum_{i=1}^{4} x_i) + 84(\sum_{j=1}^{4} y_j)$$

   s.t.

$$x_1 + y_1 + x_4 + y_4 + y_3 \geq 12$$
$$x_2 + y_2 + x_1 + y_1 + y_4 \geq 8$$
$$x_3 + y_3 + x_2 + y_2 + y_1 \geq 6$$
$$x_4 + y_4 + x_3 + y_3 + y_2 \geq 15$$
$$x_i, y_i \geq 0 \quad \forall i \in [1 \dots 4]$$