Example 3.2

Q 对比 M/M/1 系统 1 2 , cost-effective?

1st	2nd
$\mu_1 = 10$ parts/h	$\mu_2 = 20$ parts/h
$C_1 = \$100$/mth	$C_2 = \$180$/mth

$\lambda = 8$ parts/h

cost = \$1/h

worktime 200 h/mth

Solution 算每小时花的钱来对比

1st: $cost_1 = \frac{100}{200} + L_1 \cdot 1$

$L_1 = \frac{\lambda}{\mu_1 - \lambda} = \frac{8}{10-8} = 4$

$cost_1 = 0.5 + 4 = \$4.5/h$.

2nd $cost_2 = \frac{180}{200} + L_2 \cdot 1$

$L_2 = \frac{\lambda}{\mu_1 - \lambda} = \frac{8}{20-8} = \frac{8}{12} = \frac{2}{3}$

$cost_2 = \$1.5667/h$

2nd is more cost effective.