In[65]:=
```
Clear[λ1, λ2, μa, μb, H, R, cond0, cond1, cond2, cond3]
cond0 = 0 < λ1 && 0 < λ2 && λ1 + λ2 < μa < μb && 0 < H < R
cond1 = R λ1 - H 1/(μa - λ1) > 0 > R (λ1 + λ2) - H 1/(μa - (λ1 + λ2))
cond2 = R λ1 - H 1/(μb - λ1) < R (λ1 + λ2) - H 1/(μb - (λ1 + λ2))
cond3 = 1/(μb - (λ1 + λ2)) > 1/(μa - λ1)
```

Out[66]= $0 < \lambda 1 \&\& 0 < \lambda 2 \&\& \lambda 1 + \lambda 2 < \mu a < \mu b \&\& 0 < H < R$

Out[67]= $R\,\lambda 1 - \frac{H}{-\lambda 1 + \mu a} > 0 > R\,(\lambda 1 + \lambda 2) - \frac{H}{-\lambda 1 - \lambda 2 + \mu a}$

Out[68]= $R\,\lambda 1 - \frac{H}{-\lambda 1 + \mu b} < R\,(\lambda 1 + \lambda 2) - \frac{H}{-\lambda 1 - \lambda 2 + \mu b}$

Out[69]= $\frac{1}{-\lambda 1 - \lambda 2 + \mu b} > \frac{1}{-\lambda 1 + \mu a}$

In[70]:=
```
FindInstance[cond0, {λ1, λ2, μa, μb, H, R}]
FindInstance[cond0 && cond1, {λ1, λ2, μa, μb, H, R}]
FindInstance[cond0 && cond1 && cond2, {λ1, λ2, μa, μb, H, R}]
res = FindInstance[cond0 && cond1 && cond2 && cond3, {λ1, λ2, μa, μb, H, R}]
```

Out[70]= $\{\{\lambda 1 \to 1,\ \lambda 2 \to 1,\ \mu a \to 3,\ \mu b \to 4,\ H \to 1,\ R \to 2\}\}$

Out[71]= $\left\{\left\{\lambda 1 \to \frac{23}{8},\ \lambda 2 \to 1,\ \mu a \to 4,\ \mu b \to 5,\ H \to \frac{95}{128},\ R \to 1\right\}\right\}$

Out[72]= $\left\{\left\{\lambda 1 \to \frac{29}{16},\ \lambda 2 \to 1,\ \mu a \to 3,\ \mu b \to 4,\ H \to \frac{391}{512},\ R \to 1\right\}\right\}$

Out[73]= $\left\{\left\{\lambda 1 \to \frac{13}{16},\ \lambda 2 \to 2,\ \mu a \to 3,\ \mu b \to 4,\ H \to \frac{391}{512},\ R \to 1\right\}\right\}$

In[155]:=
```
res1 = Last[res]
N[res1, 2]
```

Out[155]= $\left\{\lambda 1 \to \frac{13}{16},\ \lambda 2 \to 2,\ \mu a \to 3,\ \mu b \to 4,\ H \to \frac{391}{512},\ R \to 1\right\}$

Out[156]= $\{\lambda 1 \to 0.81,\ \lambda 2 \to 2.0,\ \mu a \to 3.0,\ \mu b \to 4.0,\ H \to 0.76,\ R \to 1.0\}$

In[149]:=

```
Print["Profit(λ1,μa) = ", N[R λ1 - H 1/(μa - λ1) /. res1, 2]]
Print["Profit(λ1+λ2,μa) = ", N[R (λ1 + λ2) - H 1/(μa - (λ1 + λ2)) /. res1, 2]]
Print["Profit(λ1,μb) = ", N[R λ1 - H 1/(μb - λ1) /. res1, 2]]
Print["Profit(λ1+λ2,μb) = ", N[R (λ1 + λ2) - H 1/(μb - (λ1 + λ2)) /. res1, 2]]
Print["Waiting time(λ1,μa) = ", 1/(μa - λ1), " = ", N[1/(μa - λ1) /. res1, 2]]
Print["Waiting time(λ1+λ2,μb) = ", 1/(μb - (λ1 + λ2)), " = ", N[1/(μb - (λ1 + λ2)) /. res1, 2]]
```

```
Profit(λ1,μa) = 0.46
Profit(λ1+λ2,μa) = -1.3
Profit(λ1,μb) = 0.57
Profit(λ1+λ2,μb) = 2.2
Waiting time(λ1,μa) = 1/(μa - λ1) = 0.46
Waiting time(λ1+λ2,μb) = 1/(μb - (λ1 + λ2)) = 0.84
```