3.7 Peak Load Pricing Example

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$P_H = 14 - \frac{1}{2} q_H \qquad P_L = 12 - \frac{1}{2} q_L \qquad c = 2 \qquad k = 4$

1) Assume $q_H > q_L$

$MR = 14 - q_H = 4 + 2 \qquad = 12 - q_L = 2$

$q_H = 8 \qquad q_L = 10$

~~$q_L > q_H$~~

2) Assume $q_H = q_L$

$\Pi = (14 - \frac{1}{2} q) q + (12 - \frac{1}{2} q) q - (2 + 4) q$

$= 14 - q + 12 - q - 8 = 0$

$2q = 18$

$q = 9 \Rightarrow P_H = 14 - \frac{1}{2} 9 = 9.5 \qquad P_L = 12 - \frac{1}{2} 9 = 7.5$