BUNDLING

$\boxed{\textbf{OPTION 1}.}$ Offer only one type of package (Q,V) which will be bought only by type H, because $V > W_L(Q)$ but $V \leq W_H(Q)$.

Profit-maximizing bundle has Q_1^* as the solution to $P_H(Q) = c$ and $V_1^* = W_H(Q_1^*)$

$\boxed{\textbf{OPTION 2}.}$ Offer only one package (Q,V) which will be bought by both types, because $V \leq W_L(Q)$ (which implies that $V < W_H(Q)$ since $W_L(Q) < W_H(Q)$ when Q > 0).

Profit-maximizing bundle has Q_2^* as the solution to $P_L(Q) = c$ and $V_2^* = W_L(Q_2^*)$

$\boxed{\textbf{OPTION 2}}$. Offer two packages: (Q_H,V_H) targeted to the high type and (Q_L,V_L) targeted to the low type. Constraints:

(IR_L) $V_L \leq W_L(Q_L)$

(IC_L) $W_L(Q_L) - V_L \geq W_L(Q_H) - V_H$

(IR_H) $V_H \leq W_H(Q_H)$

(IC_H) $W_H(Q_H) - V_H \geq W_H(Q_L) - V_L$

Observation 1: (IR_H) is redundant.

Observation 2: (IC_H) must be satisfied as an equality. Thus

$$V_H = W_H(Q_H) - W_H(Q_L) + V_L$$

Replacing this in (IC_L) and simplifying, we get that (IC_L) is satisfied if

$W_H(Q_H) - W_H(Q_L) \geq W_L(Q_H) - W_L(Q_L)$ which is true if $Q_H \geq Q_L$

Strategy: solve maximization problem without (IC_L) and then check if the solution is such that $Q_H \geq Q_L$