Let x be the amount you bidded, Find x that leads to highest $E(w)$, and W be the profit you made. where $100 \leqslant x \leqslant 140$ let Y be minimum bid by other company support of X is

support of w is Expected profit if you bi. $E(\omega) = (x-100)\frac{(140-x)}{70}$ Forafixed x, $w = \begin{cases} (x-100), \text{ with probability } \dfrac{140-x}{70} \\ 0, \text{ with probability } \dfrac{x-70}{70} \end{cases}$ $\frac{1}{70}\left(140x\right.$

$f_X(x) = f_Y(y) = \dfrac{1}{70}$ $\dfrac{d(E(\omega))}{dx} = \dfrac{24}{7} - \dfrac{1}{75}x$ $\frac{1}{35}x = \frac{24}{7}$ $x = 120$ $\frac{d^2(E(\omega))}{dx^2} =$

$f_Y(y) = \dfrac{y-70}{70}$ when $\dfrac{d(E(\omega))}{dx} = 0,$

$-\frac{1}{35} \because -\frac{1}{35} < 0, \frac{d^2[E(\omega))}{dx^2} < 0, \therefore$ profit is maximised. $\therefore$ you should bid $F120,000.$