

Let x be amount bidded (fixed)
 Go W be profit made.
 let y be the minimum bid
 $y \sim v(70, 100)$
 $P(\text{mabid}) = P(x < y)$
 $= 1 - p(y < x)$
 $= 1 - \int_{x_0}^x \frac{1}{70} dx$
 $= 1 - \left(\frac{x-70}{70}\right)$
 $= 2 - \frac{x}{70}$
 $\therefore w = \begin{cases} x - 100 & P(w = x - 100 = 2 - \frac{x}{70}) \\ 0 & 1 - (2 - \frac{x}{70}) \end{cases}$
 \therefore Expect profit.

$$\begin{aligned}
 E(w) &= (x - 100) \left(2 - \frac{x}{70}\right) \\
 &= 2x - 200 - \frac{x^2}{70} + \frac{100}{70}x.
 \end{aligned}$$

Now find $\frac{d(G(w))}{dx} = 2 - \frac{x}{35} + \frac{10}{7}$.

$$\therefore -\frac{x}{35} = -\frac{24}{7}.$$

$$\frac{d^2 \varepsilon(\omega)}{dx} = -\frac{1}{35} \quad x = 120.$$

$\therefore x = 120$ is a maximum.

I should bid \$120k.