Let X be amount bidded

W be pofit made.

$W = X - 100$ or $W = 0$ (not lowest bid) $\qquad f_Y(y) = \begin{cases} \frac{1}{140-70}, & 70 < x < 160 \\ 0, & \text{otherwise} \end{cases}$

$\therefore E(W) = 0 \cdot \int_{70}^{x} f_Y(y) l_y - (x - 100) \int_{x}^{1w_0} f_{Y(y)} dy$

$= 0 + (x - 100)\left(2 - \frac{1}{70}x\right)$

$= -\frac{1}{70}x^2 + \frac{24}{7}x - 200$

$\left(-\frac{\frac{2\varphi}{7}}{2 \cdot \left(-\frac{1}{20}\right)} = 120\right)$

symmerity anis of parobola

$\Rightarrow$ When $x = 120$, the exprected profit will be maximined