

of people price
 1000 people → 5\$
 900 → 6\$
 800 → 7\$

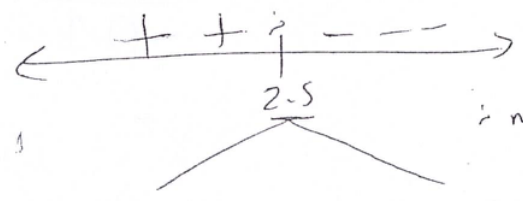
1000 - 100x → 5 + x

$$\begin{aligned} \therefore R(x) &= (1000 - 100x)(5 + x) \\ &= 5000 + 1000x - 500x - 100x^2 \\ &= 5000 + 500x - 100x^2 \end{aligned}$$

$$\rightarrow R'(x) = 500 - 200x = 0$$

$$\begin{array}{r} 500 - 200x = 0 \rightarrow -200x = -500 \\ -500 \qquad -500 \qquad -200 \qquad -200 \end{array}$$

$$\boxed{\therefore x = 2.5}$$



∴ max at x = 2.5

$$\begin{aligned} \rightarrow \text{price} &= 5 + x \\ &= 5 + 2.5 = 7.5 \end{aligned}$$

$$\begin{aligned} \text{max. revenue} &= (1000 - 100x)(5 + x) \\ &= (1000 - 100(2.5))(5 + 2.5) \\ &= (750)(7.5) \\ &= 5625 \end{aligned}$$