

Worked w/ Austin  
Passed solution review

Demand for gizmos:  $q = 6 - .5p + .0002I$

$I = \text{income} = 60k$

$$\begin{aligned} a) \quad q &= 6 - .5p + .0002(60k) \\ q &= 6 - .5p + 12 \\ q &= 18 - .5p \\ .5p &= 18 \\ p &= 36 \end{aligned}$$

$$\begin{aligned} b) \quad q &= 6 - .5(10) + .0002(60k) \\ q &= 6 - 5 + 12 \\ q &= 13 - 5 \\ q &= 13 \end{aligned}$$

$$\begin{aligned} c) \quad PED &= \% \Delta Q / \% \Delta P = (\Delta Q / \Delta P)(P/Q) \\ PED &= -.5 \cdot (10/13) = -.38 \end{aligned}$$

$$\begin{aligned} d) \quad \frac{1}{2} \cdot 13 \cdot (36 - 10) &= \\ \frac{1}{2} \cdot 13 \cdot 26 &= \\ 13^2 &= 169 \end{aligned}$$

$$\begin{aligned} e) \quad q &= 6 - .5(12) + .0002(60k) \\ q &= 6 - 6 + 12 \\ q &= 12 \\ \frac{1}{2} \cdot 12 \cdot (36 - 12) &= 6 \cdot 24 = 144 \\ 169 - 144 &= 25 \\ \text{The loss in CS is } 25 \end{aligned}$$

$$\begin{aligned} f) \quad q &= 6 - .5p + .0002(80k) \\ q &= 6 - .5p + 16 \\ q &= 22 - .5p \\ .5p &= 22 \\ p &= 44 \end{aligned}$$

$$\begin{aligned} q &= 6 - .5(10) + .0002(80k) \\ q &= 6 - 5 + 16 \\ q &= 17 \end{aligned}$$

$$\begin{aligned} q &= 6 - .5(12) + 16 \\ q &= 6 - 6 + 16 \\ q &= 16 \end{aligned}$$

$$\frac{1}{2} \cdot 17 \cdot (44 - 10) = 8.5(34) = 289$$

$$\frac{1}{2} \cdot 16 \cdot (44 - 12) = 8 \cdot 32 = 256$$

The loss in CS is 33

$$289 - 256 = 33$$