HW 3.1

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Worked w/ AwShin

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

I = income = 60k

a) $Q = 6 - .5p + .0002(60k)$
$Q = 6 - .5p + 12$
$Q = 18 - .5p$
$.5p = 18$
$p = 36$

b) $q = 6 - .5(10) + .0002(60k)$
$q = 6 - 5 + 12$
$q = 18 - 5$
$q = 13$

c) $PED = \%\Delta Q / \%\Delta P = (\Delta q/\Delta p)(p/q)$
$PED = -.5 \cdot (10/13) = -.38$

d) $\frac{1}{2} \cdot 13 \cdot (36 - 10) =$
$\frac{1}{2} \cdot 13 \cdot 26 =$
$13^2 = 169$

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

f) $Q = 6 - .5p + .0002(80k)$
$Q = 6 - .5p + 16$
$Q = 22 - .5p$
$.5p = 22$
$p = 44$

$q = 6 - .5(10) + .0002(80k)$
$q = 6 - 5 + 16$
$q = 17$

$q = 6 - .5(12) + 16$
$q = 6 - 6 + 16$
$q = 16$

$\frac{1}{2} \cdot 17 \cdot (44 - 10) = 8.5(34) = 289$
$\frac{1}{2} \cdot 16 \cdot (44 - 12) = 8 \cdot 32 = 256$

$289 - 256 = 33$

The loss in CS is 33