

Business and Economics Applications - Key

In problems 1-4, Find the number of units x that produces a maximum revenue R .

1. $x = 250$	2. $x = 25$
3. $x = 7$	4. $x = 13$

In problems 5-8, Find the number of unit x that produces the minimum average cost per unit \bar{C}

5. $x = 45$	6. $x = 84$
7. $x = 16$	8. $x = 6$

In problems 9-12, Find the price that will maximize profit for the demand and cost functions, where p is the price, x is the number of units, and C is the cost.

9. $p = 70$	10. $p = 53.86$
11. $p = 16.68$	12. $p = 1.00$

In problems 13-14, Use the cost function to find the production level at which the average cost is a minimum.

13. $x = 1$	14. $x = 4$
-------------	-------------

In problems 15-16, Find the amount s spent on advertising (in thousands of dollars) that maximizes the profit P . Find the point of diminishing returns.

15. $s = 10$ $PODR : (3,71)$	16. $s = 13$ $PODR : (7,627)$
---------------------------------	----------------------------------

Find the price elasticity of demand for the demand function at the indicated x -value. Is the demand elastic, inelastic, or of unit elasticity at the indicated x -value? Identify the intervals of elasticity and inelasticity.

17. $\eta = -2.125$ so $ \eta = 2.125$ so elastic elastic : $x < 63$ inelastic : $x > 63$	18. $\eta = -1$ so $ \eta = 1$ so unit elastic elastic : $x < 20$ inelastic : $x > 20$
---	--

Business and Economics Applications - Key

19.

$\eta = -1.02$ so $|\eta| = 1.02$ so unit elastic

elastic : $(0, \infty)$

20.

$\eta = -1.32$ so $|\eta| = 1.32$ so unit elastic

elastic : $(0, \infty)$

Business and Economics Applications - Key
