

UNIVERSITY OF WISCONSIN
Economics 101 – Spring 2007
Professor Brown

Problem set 9 answers

1. Throughout, also see attached figure.

a. $ATC = 32/q + 10 + 2q$
 $AVC = 10 + 2q$
 $AFC = 32/q$

c. any price between 10 and 26 is correct.

d. any price less than 10 is correct.

e. In a long-run equilibrium, $P = 26$

f. 10 firms will operate.

g. There are many possible things to say here. I would argue that the tennis racket market is *not* perfectly competitive, both because there are relatively few brands of tennis rackets and vast differences in quality (and price) between them.

2.

a. Jim should produce 5 tanks.

b. from the table give, we can compute variable cost by summing the marginal costs, and from there we can compute average variable cost by dividing variable cost by output:

| Output (Q) | Marginal Cost (MC) | Variable Cost (VC) | Average Variable Cost (AVC) |
|------------|--------------------|--------------------|-----------------------------|
| 1 | 15 | 15 | 15 |
| 2 | 10 | 25 | 12.5 |
| 3 | 5 | 30 | 10 |
| 4 | 6 | 36 | 9 |
| 5 | 14 | 50 | 10 |
| 6 | 20 | 70 | 11.67 |

Then, from the table, it is clear AVC is minimized at $Q = 4$.

c. It is immediate from b. that Jim's shut down price is \$9. If the price of tanks is less than \$9, Jim cannot possibly cover his variable costs, and so will lose money even in the short run, and is better off producing nothing.

3. b

4. e

