

IN-CLASS ASSIGNMENT: Costs in the Short-Run

Monday, March 30th

5 points

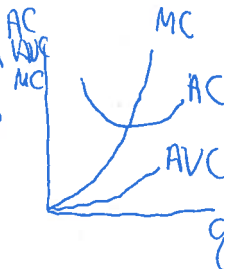
Name: ANSWER KEY

1. The short-run cost function for Surf's company is $C = 25 + 5q + 4q^2$, where C = dollars per day, and q = number of surfing lessons taught.
 - a. Create a table for fixed cost, variable cost, total cost, marginal cost, average cost, average fixed cost, and average variable cost. Use integer values of output from $q = 1$ to $q = 5$.

q	Fixed Cost	Variable Cost	Total Cost	Marginal Cost	Average Cost	Average Variable Cost
1	25	9	34	13 or 9	34	9
2	25	26	51	24 or 17	25.5	13
3	25	51	76	29 or 25	25.33	17
4	25	84	109	37 or 33	27.25	21
5	25	125	150	45 or 41	30	25

- b. Explain the relationship between marginal cost and average cost/average variable cost in this example.

AC is falling when $MC < AC$ and rising when $MC > AC$. Also, AVC is increasing for all levels of output as $MC > AVC$.



- c. Find the output where average cost is minimized (Hint: $MC = AC$). (Note: A similar process is used to find the output where average variable cost is minimized.)

$MC = AC$ solve for q .

$$5 + 8q = \frac{25}{q} + 5 + 4q$$

$$4q = \frac{25}{q}$$

$$q^2 = \frac{25}{4}$$

$$q = 2.5$$

