

In class Chapter 7:

Algebraic Example of Short-Run costs:

Total Costs = $rK + wL$

If $r = 10$ and $K = 4$ and $w = 50$ in the short run, and the production function is $Q = 2KL$

1) Find the total cost

First, $Q^{SR} = 2 \cdot 4 \cdot L = 8L \Rightarrow L = Q/8$

So the $TC = 10 \cdot 4 + 50 \cdot Q/8 = 40 + 6.25Q$

Note: $TC = 40$ (fixed cost) + $6.25Q$ (variable cost)

2) Find AFC

$AFC = 40/Q$

3) Find AVC

$AVC = 6.25Q/Q = 6.25$

4) Find ATC

$ATC = \frac{40 + 6.25Q}{Q} = 40/Q + 6.25$

5) Find MC

$MC = dTC/dQ = 6.25$ (constant because of the production function used!)