

Ambiguous Terminology

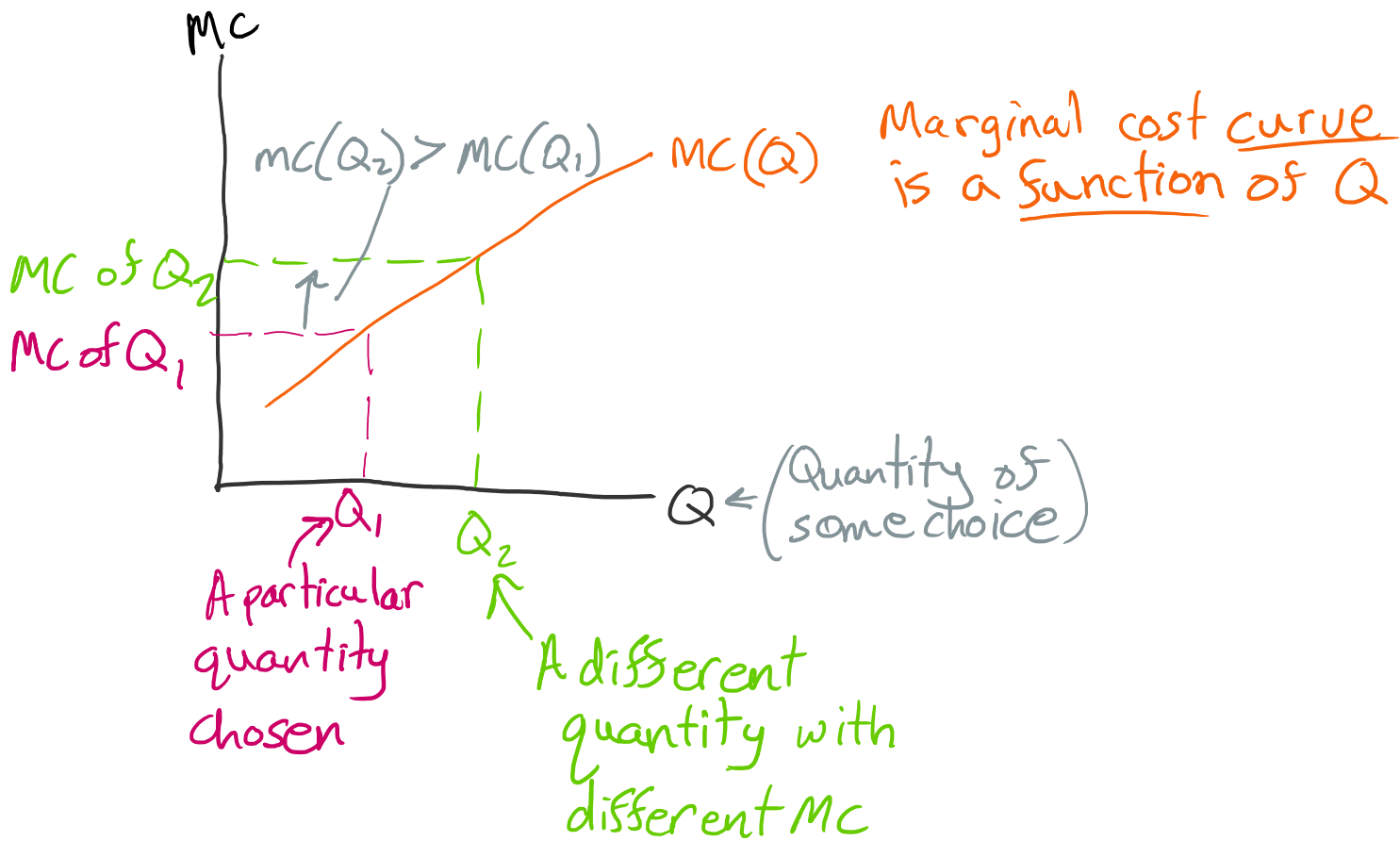
Thursday, October 14, 2021

5:04 PM

and marginal benefit

"Marginal Cost" can mean multiple things:

- Curve/function
- MC of particular choice



How to deal with this:

- Use explicit language
- Look for and use contextual cues

"MC of 3rd slice of pizza"

Unambiguous:

• "MC of 2nd slice of pizza"

- "MC of 3rd slice of pizza"
- "As you spend more time playing video games, the MC increases"

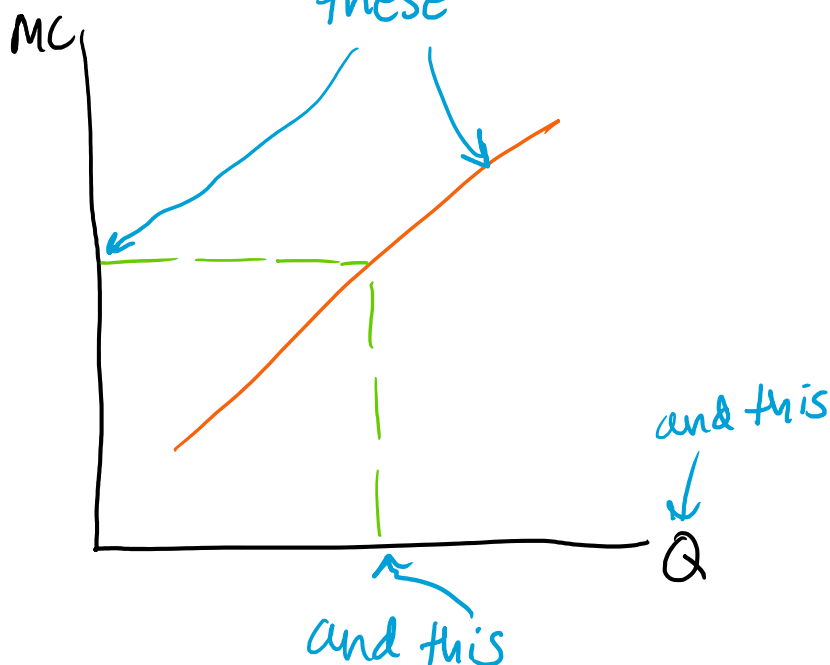
Ambiguous:

"Having more homework to do increases MC of playing games"

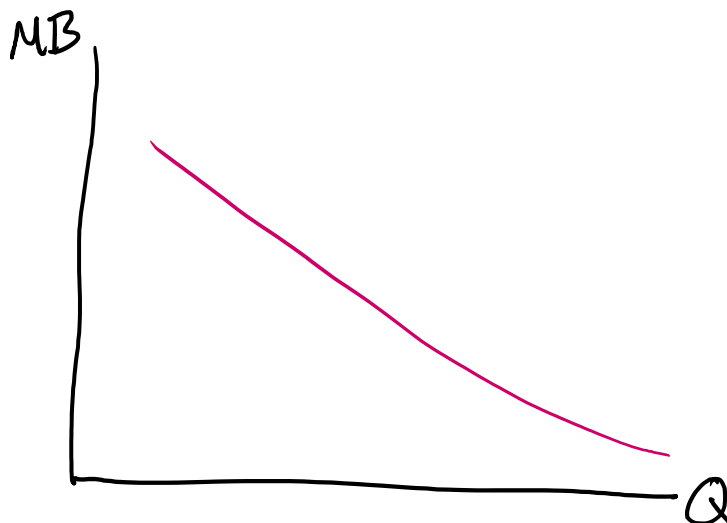
(homework both shifts MC curve up and causes MC of actual choice to be higher—see 'shifting curves')

Self check (try without checking notes)

1. Describe both of these



2. Do the same thing with MB:



“At” versus “of”

These prepositions are difficult. These are both appropriate ways to describe MC:

- “The marginal cost of the 3rd unit”
- “The marginal cost at 3 units”

If we choose 3 units of something, then we are “at” the horizontal position of 3 on the graph. We then face some marginal cost, which is the marginal cost of the 3rd unit.*

* You might wonder why the marginal cost we face is not the MC of the 4th unit. After all, if we already have 3, adding one more would mean adding a 4th. That is also be a reasonable way to think about the problem. However, there is a reason why you will almost always hear/see me say/write “at” instead of “of”: it eliminates the ambiguity when dealing with choices about continuous variables. For choices about continuous variables, the height of the marginal cost curve at any quantity chosen is the slope of the total cost curve. Because we do not care about whole numbers, it does not matter whether that is the cost of the unit that got us to that point or the next unit after that point. In fact, we can talk about the MC of changes smaller than 1. For a change in Q of, say, 0.0001, the MC of the last 0.0001 and of the next 0.0001

are closer in value on average than when we think about larger changes in Q (like 1). The smaller the changes in Q get, the closer and closer the MC of those changes get to each other. This is why the distinction does not matter. Hey! You just learned calculus!