

Math 111  
Review for Exam I

- You should know how to complete all assigned homework problems (especially Problems) and quiz section activities.
- Given a table or a graph of a quantity, you should be able to define and compute overall rates of change and incremental rates of change of that quantity.
- Given a graph of a rate of change of a quantity, you should be able to answer questions about that quantity. (Like the Problems from Worksheet 4)
- You should be able to give examples of an overall rate of change and an incremental rate of change.
- Given the graph of a function, you should be able to use the “rolling ruler method” to answer questions about overall and incremental rates of change.
- You should be able to translate between English, the language of graphs, and functional notation. In particular, you should be able to talk about the different rates of change in all three languages.
- Given graphs of  $TC$  and  $TR$ , you should be able to determine information about profit.
- You should be able to explain the concepts of  $MR$  and  $MC$  in your own words.
- You should be able to determine the effects  $MR$  and  $MC$  have on profit.
- Given the graph of  $TR$ , you should be able to find values of  $MR$  and  $AR$ .
- Given the graph of  $TC$ , you should be able to find values of  $MC$ ,  $AC$ , and  $VC$ . You should also be able to determine the breakeven price. You could also use the graph of  $TC$  to determine the shutdown price (how?).
- Given the graph of  $VC$ , you should be able to find values of  $MC$  and  $AVC$ . If you know  $FC$ , you should also be able to find values of  $TC$ . Also, given  $VC$ , you should be able to determine the shutdown price.
- Given the graphs of  $MC$  and  $AC$ , you should be able to determine the breakeven price. Given the graphs of  $MC$  and  $AVC$ , you should be able to determine the shutdown price.