

ASSIGNMENT

Read 14.2

- p. 792 3,14,21,24,31

TAKE-AWAYS

After reading this section, attending this class and doing this homework you should

- know that doing these problems takes a while
- see that you can find some limits by using continuity (these problems aren't interesting *at all*)
- remember the Squeeze Theorem
- know that for a limit as $(x, y) \rightarrow (0, 0)$ to exist it $f(x, y)$ must approach the same L no matter how you approach $(0, 0)$. There are infinitely many ways to do this (there's actually a "big" infinity number of ways to do this, not a "small" infinity of ways)
- remember there is one way to prove that a limit doesn't exist (show that along two different paths you get two different limits)
- remember showing that limits are the same along two (or more) paths DOESN'T show that the limit exists
- accept that to prove a limit exists you only have two real options (in this book): first, use the Squeeze Theorem like we did in class or, second, turn it into polar and hope it ends up having just one variable
- know even if you think the limit exists, that it probably makes sense for you do take a few limits along certain paths to have a guess as to what that limit should be.