

Quiz #3

Monday, October 3 2016

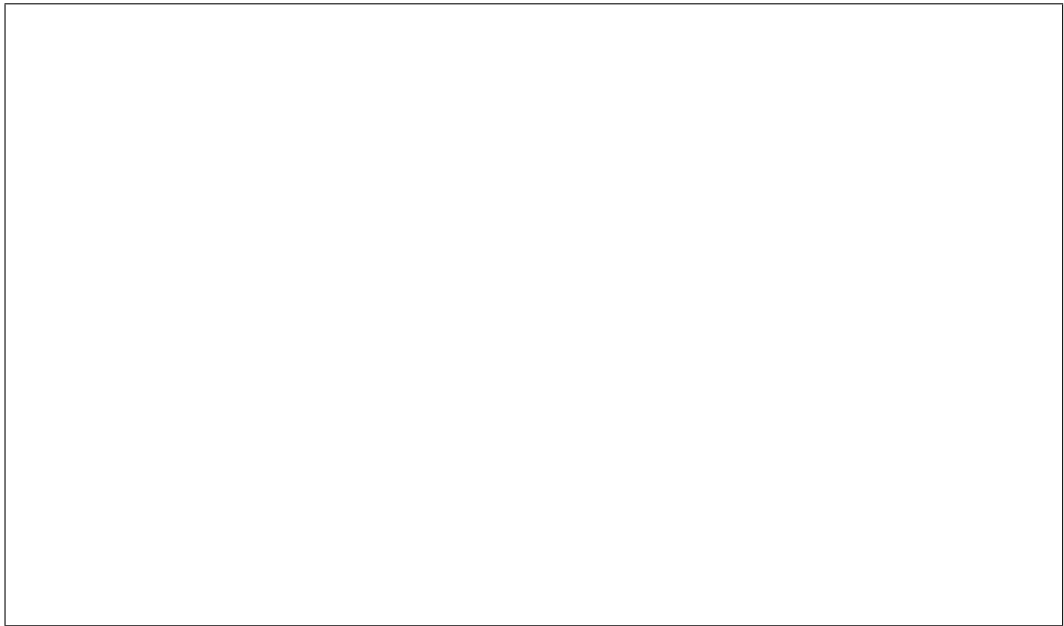
NAME: _____

Please write clearly and properly.

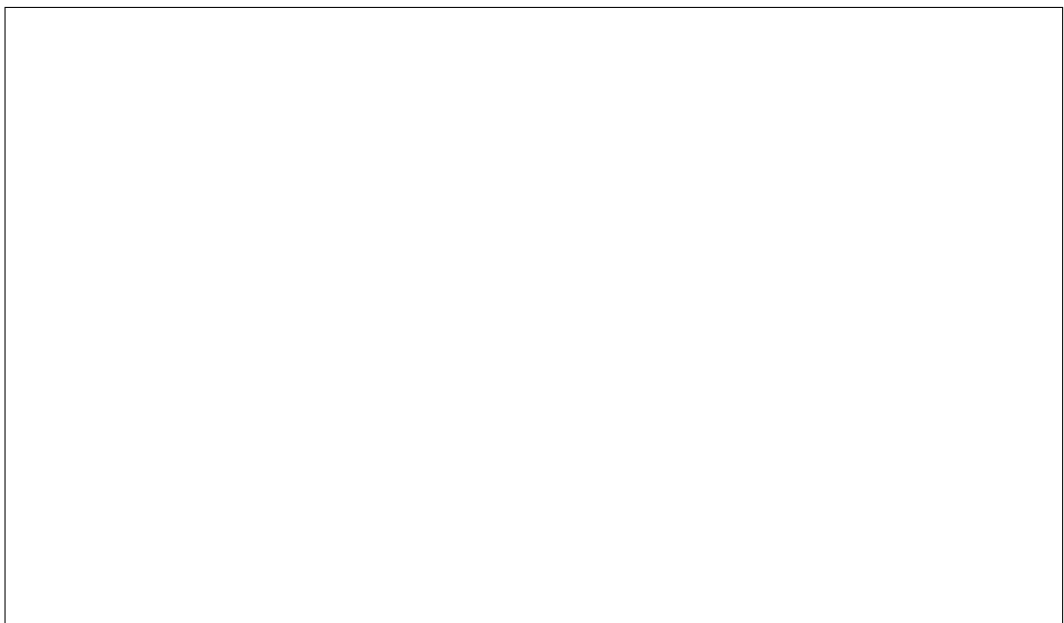
Problem	Grade
1	
2	
Total	

Problem 1 (~ 4 points.).

- (1) Draw a set A in the complex plane which is star-shaped, but not convex. On your picture, show why A fails to be convex.



- (2) Draw a set B in the complex plane which is path-connected, but not simply connected. On your picture, show why B fails to be simply connected.



Problem 2 (~ 5 points.). Consider the polynomial $P(z) = z^5 + z^4 + z^3$.

- (1) How many roots does P have, counted with multiplicity?

- (2) Find all the roots of P and their multiplicities.