Quiz 4

Math 3C: Precalculus

October 31, 2019

When you finish, please remain seated until class is dismissed

Name: _____ PID: _____

Problem 1 (3 points). Let $p(z) = 3z^2 + 8z - 3$. Find the horizontal intercepts of $p(z)$ using the quadratic formula. Simplify as much as possible.

Problem 2 (7 points). Let $f(x) = (x + 1)^3(x - 1)^2(x + 2)$. Another way of writing $f(x)$ is $f(x) = x^6 + 3x^5 - 6x^3 - 3x^2 + 3x + 2$

(a) What is the long-run behavior of $f(x)$?

(b) What is the vertical intercept of $f(x)$?

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(c) What are the horizontal intercepts (zeros) of $f(x)$?

(d) What are the multiplicities of the zeros you found in part (c)?

(e) Sketch a graph of $f(x)$. Be sure to label the vertical and horizontal intercepts.