

Math 1513 - College Algebra

Written Assignment 4 - Due 2016.07.03

Directions: Please answer the following question in complete sentences. Be sure to label all geometric objects in any illustrations (if any). I will accept an answer in a scanned image format, as a pdf, or as a picture taken and sent from your awesome smart phone.

Question: Draw a continuous function f that has the following characteristics, then state the zeroes and the location of all maximum and minimum values.

- (a) Domain: $x \in (-10, \infty)$
- (b) Range: $y \in (-6, \infty)$
- (c) $f(0) = f(4) = 0$
- (d) $f(x)$ is increasing for $x \in (-10, -6) \cup (-2, 2) \cup (4, \infty)$
- (e) $f(x)$ is decreasing for $x \in (-6, -2) \cup (2, 4)$
- (f) $f(x) \geq 0$ for $x \in [-8, -4] \cup [0, \infty)$
- (g) $f(x) < 0$ for $x \in (-10, -8) \cup (-4, 0)$