

# Math 1513 - College Algebra

## Written Assignment 4 - Due 2017.07.02

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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  $x \in (-10, -8) \cup (-4, 0)$