

Math 2143 - Brief Calculus with Applications

Written Assignment 1 - Due 2018.06.10

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: Sketch the graph of a single function $f(x)$ which satisfies all of the following criteria.

(1) The domain of $f(x)$ is $(-5, 0) \cup (0, 4) \cup (5, 8]$

(2) $f(x)$ is continuous on each subinterval $(-5, 0)$, $(0, 4)$ and $(5, 8]$

(3) $\lim_{x \rightarrow 0^-} f(x) = 2$

(4) $\lim_{x \rightarrow 0^+} f(x) = 3$

(5) $\lim_{x \rightarrow -5^+} f(x) = -2$

(6) $f(-3) = 0$

(7) $\lim_{x \rightarrow 4^-} f(x) = 6$

(8) $\lim_{x \rightarrow 5^+} f(x) = 1$

(9) $f(8) = 10$