

MA 113 CALCULUS I, SPRING 2019
WRITTEN ASSIGNMENT #2

Instructions: The purpose of this assignment is to develop your ability to formulate and communicate mathematical arguments. Your complete assignment should have your name and section number on each page, be stapled, and be neat and legible. *Unreadable work will receive no credit.*

You should provide well-written, complete answers to each of the questions. We will look for correct mathematical arguments, complete explanations, and correct use of English. Your solution should be formulated in complete sentences. As appropriate, you may want to include diagrams or equations written out on a separate line. You may read your textbook to find examples of how we communicate mathematics.

Students are encouraged to use word-processing software to produce high quality solutions. However, you may find that it is simpler to add graphs and equations using pen or pencil.

1. Consider a circle C with center O and circumference 120 cm. Let P and Q be two points on the circle that are endpoints of an arc that is 12 centimeters long.
 - (a) (2 points) Find the radius of the circle C . Include units!
 - (b) (2 points) Find the angle between the segments OP and OQ . Express your answer in radians.
2. The position of an object after t seconds is $s(t) = t^3 + t$ meters.
 - (a) (2 points) What is the average velocity of the object between 3 seconds and 5 seconds? Include units!
 - (b) (2 points) As a function of x , what is the average velocity of the object between x seconds and $x + 1$ seconds? Include units!