MATH 1743: Pre-Quiz #5

Section 2.3

Problem 1: What are the four parts of a good change answer?

1. 

2. 

3. 

4. 

Problem 2: Write down the following interest formulas, and then fill in the blanks for what each of the variables in the formula represent:

Interest compounded $n$ times per year: Continuously compounded interest:

\[ A = \text{___________________________} \quad P = \text{___________________________} \]
\[ r = \text{___________________________} \quad t = \text{___________________________} \]

Problem 3: Write down the following formulas for APR and APY:

a. APR (also known as the __________________ rate)
   annually:
   
   per compounding period:

b. APY (also known as the __________________ rate):
   for $n$ compoundings per year:
   
   for continuous compounding:
Problem 4: Suppose that \( T(p) \) is the number of tickets from Boston to Washington D.C. that a certain airline sells in one week when the price of each ticket is \( p \) dollars. Interpret the following:

a. \( T(115) = 1750 \)

b. \( T'(115) = 220 \)

c. \( \frac{dT}{dp} = 22 \) when \( p = 125 \)

Problem 5: Let \( P(x) \) be the profit in dollars that a fraternity makes after selling \( x \) number of T-Shirts.

1. Is it possible for \( P(x) \) to be negative?

2. Is it possible for \( P'(x) \) to be negative? Explain.

3. If \( P'(200) = -1.5 \), is the fraternity losing money?