Here is a list of some concepts for Exam 1 which may be somewhat different from the problems in the homework. You should be sure that you understand each of these concept problems.

For Exam 1:

1. State the formal, limit definition of the derivative. Explain how each piece of the definition relates to a picture.

2. (a) Is \( \frac{x^2 - 25}{x - 5} = x + 5 \)? Explain your answer.
   
   (b) Is \( \lim_{x \to 5} \frac{x^2 - 25}{x - 5} = \lim_{x \to 5} (x + 5) \)? Explain your answer.

3. When given a revenue function, \( R(x) \), and a cost function \( C(x) \), be able to find the profit function, \( P(x) \). Be able to explain the meanings and implications of \( P(10) \) and \( P'(10) \).

4. Every morning at summer camp, the youngest boy scout raises the flag to the top of the flagpole. Below is a graph of the function that represents this process.

   ![Graph of flag raising process]

   (a) Mark a point on the graph where the flag is highest. Label this point with the letter A.
   
   (b) Mark a point on the graph where the derivative of the function is greatest. Label this point with the letter B.
   
   (c) Explain, in terms of the flag, why you put the point B where you did.