Name____________________________ **Student Id:**____________________________

Math 120, Section A **Quiz 7** **9 December 1997**

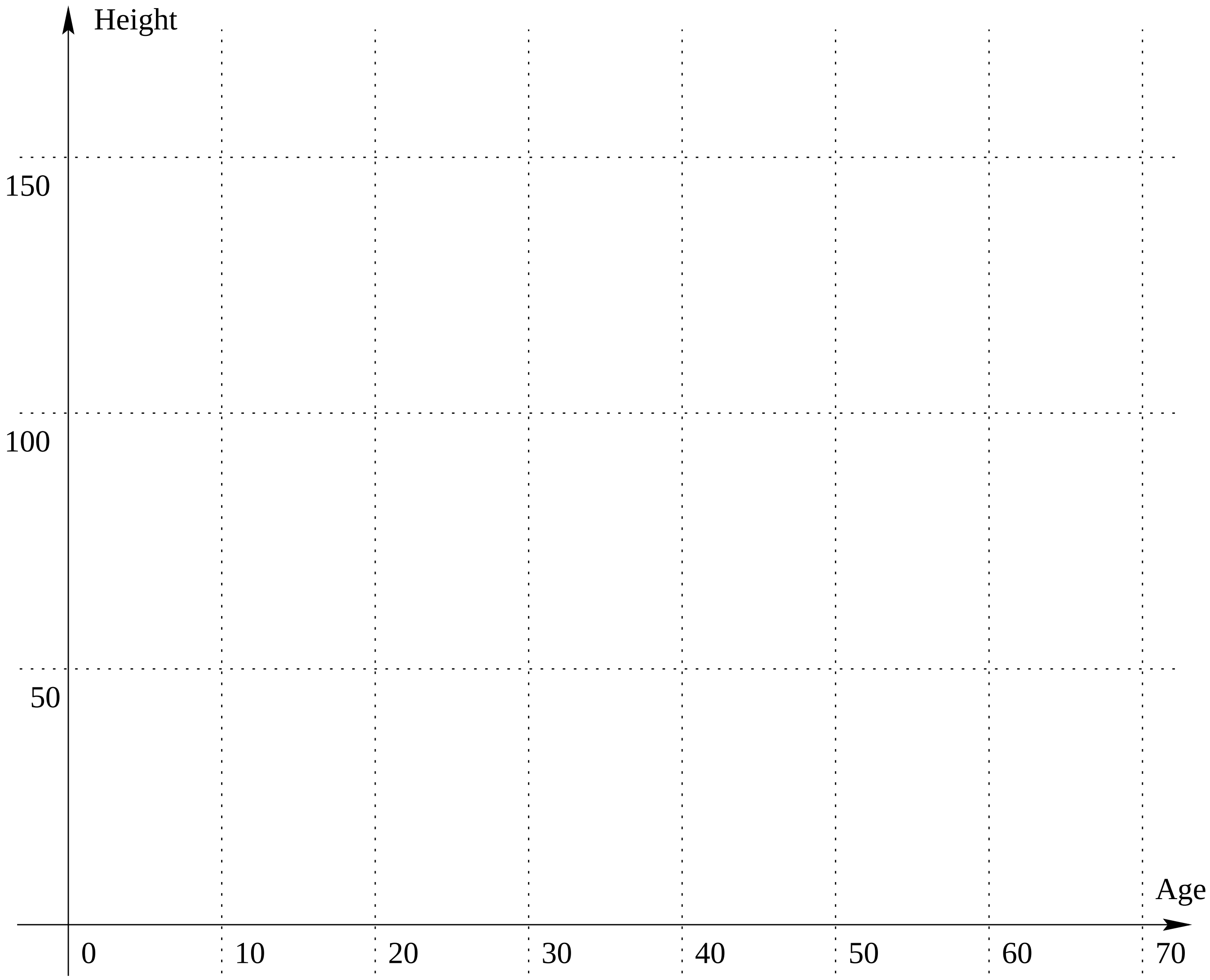
Instructions: You have 45 minutes for this quiz. Show all of your work.

Problem: The growth in height of trees is given by the following equation:

$$h(t) = \frac{150}{1 + 200e^{-0.15t}}\,.$$

Where the height h is in feet, and the age of the tree, t, is given in years.

1. (4) Sketch $h(t)$. Identify the asymptotes in your sketch.



2. (5) How tall is a tree at an age of 10 years?

3. (5) How old is a tree when it is 75 feet tall?

4. (6) How long is a tree between 10 and 15 feet tall?

5. (6) How long is a tree between 130 and 135 feet tall?

6. (4) Explain the difference between the answers you got for questions #4 and #5.