1. [13 points] Let \( W(m) \) be the weight, in Newtons, that an ant that is \( m \) months old can carry on its back. The graph of \( W'(m) \), (the derivative of \( W \)), is shown below.

\[ y = W'(m) \]

![Graph of W'(m)](image)

Answer the following questions. Write “NI” if there is not enough information to answer the question.

a. [2 points] At what age \( m \), with \( 0 \leq m \leq 14 \), can an ant carry the most weight on its back?

Answer: 

b. [2 points] At what age \( m \), with \( 0 \leq m \leq 14 \), is the amount of weight an ant can carry on its back increasing most quickly?

Answer: 

c. [2 points] On which, if any, of the following intervals does it appear that the function \( W(m) \) is always linear? Circle all correct choices, or circle NONE OF THESE if appropriate.

\( (0, 4) \quad (4, 7) \quad (8, 10) \quad (10, 13) \quad NONE \ OF \ THESE \)

d. [2 points] On which, if any, of the following intervals does it appear that the function \( W(m) \) is always decreasing? Circle all correct choices, or circle NONE OF THESE if appropriate.

\( (0, 3) \quad (6, 9) \quad (9, 10) \quad (10, 14) \quad NONE \ OF \ THESE \)

e. [3 points] Complete the following sentence using the fact that \( W'(13.5) = -1.75 \).

As the age of an ant increases from 13 months to 13.5 months, the amount of weight it can carry on its back...

f. [2 points] In the context of this problem, what are the units of the output values of the function \( W'(m) \)?

Answer: 