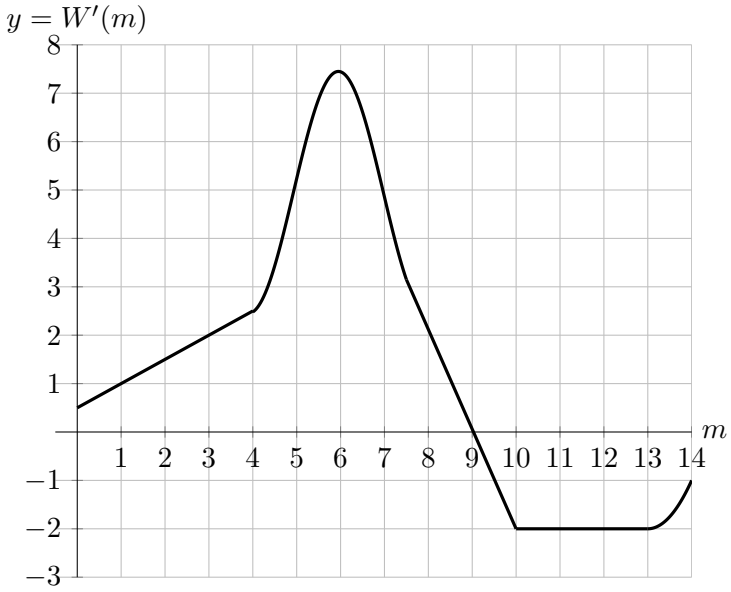
**1**. [13 points] Let $W(m)$ be the weight, in Newtons, that an ant that is $m$ months old can carry on its back. The graph of $W'(m)$, (*the derivative of* $W$), is shown below.




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.

$(0, 4)$ $(4, 7)$ $(8, 10)$ $(10, 13)$ 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.

$(0, 3)$ $(6, 9)$ $(9, 10)$ $(10, 14)$ 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:** _____