3. [8 points] A U of M student is studying the various invasive species of insects she finds in a sample plot of forest.

   a. [3 points] On her first visit to the plot, she finds 18 ash borers. She estimates that the number of ash borers will grow by 2.4% each day. Based on this estimate, write a formula for $A(w)$, the number of ash borers in her plot w <u>weeks</u> after her first visit.

Answer: $A(w) = $ _____

   b. [5 points] The student's data suggest that, w weeks after her first visit, the number of pineshoot beetles in her plot will be given by

$$P(w) = 11e^{w/6},$$

   while the number of gypsy moths will be given by

$$G(w) = 3(1.37)^w.$$

   After her first visit, how many weeks will it take for the number of pineshoot beetles to equal the number of gypsy moths? Give your answer in **exact form**.

Answer: _____