2. [11 points] The Wasem Fruit Farm produces and sells apples to its visitors during the Fall.

   i) Let $f(t)$ be the number of apples sold at the Wasem Fruit Farm t days after September 10.

   ii) The revenue (in dollars) obtained by the Wasem Fruit Farm from selling a apples is given by the function $g(a)$.

A local diner produces hot apple cider.

   i) Let $h(p)$ be the number of gallons of hot apple cider produced by the diner with p apples.

   ii) The revenue (in dollars) obtained by the diner from selling c gallons of hot apple cider is given by the function $j(c)$

Assume that all the functions defined above have an inverse.

   a. [5 points] Write a practical interpretation of the following mathematical expressions:

> *Solution:*
>
>   i) On September 20, the revenue of Wasem Fruit Farm was $199.
>
>   ii) $g^{-1}(20)$ is the number of apples giving a revenue of $20.

   b. [3 points] Let a_0 be the average amount of apples sold in a day by Wasem Fruit Farm. The function $Q(y)$ gives the number of gallons of hot apple cider the diner can produce with y more apples than the average amount sold in a day by the farm. Find a formula for $Q(y)$ in terms of the functions defined above.

> *Solution:*
> $$Q(y) = h(y + a_0)$$

   c. [3 points] Write down an equation that represents the following statement:

   The revenue obtained by Wasem Fruit Farm on September 25 is equal to the revenue obtained by the diner for the sale of 21 gallons of hot apple cider.

> *Solution:*
> $$g(f(15)) = j(21)$$