## **4**. [13 points]

- a. [6 points] Two companies, Altor and Bear, decide to invest in Cease, a small start up company, in January 2014. Let A(m) and B(m) be the money invested in Cease, in thousands of dollars, m months after January 2014 by Altor and Bear, respectively.
  - i) Find a formula for I(y), the amount of money, in thousands of dollars, invested by Alton and Bear on Cease y years after January 2014.

$$I(y) =$$

ii) Assume that only Alton and Bear invest in Cease. Find a mathematical expression that represents the fraction of the money invested in Cease by Alton in *March 2014*.

Answer:	
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- **b.** [7 points] A patient has a high fever and goes to a hospital. At the hospital, the patient receives a fever reducing medication intravenously to reduce his body temperature.
  - Let F(s) be the amount of medication (in milligrams) in the patient's body s minutes after the medication was administered.
  - Let G(s) be the patient body's temperature (in °F) s minutes after the medication was administered.

Assume that the functions F and G are invertible. Find practical interpretation of the following mathematical expressions:

i) 
$$G(100) = 105$$

ii) 
$$F^{-1}(100)$$

iii) 
$$F(G^{-1}(100))$$