1. [11 points] An animal shelter takes care of abandoned cats and dogs. Consider the following functions and constants:

- The function $F(c)$ gives the amount of pounds of cat food consumed by c cats in one day at the animal shelter.
- The function $S(p)$ gives the cost (in dollars) of p pounds of cat food.
- There were k cats in the animal shelter on December 17.
- On December 17, the animal shelter spent d dollars on dog food.

a. [4 points] Find a practical interpretation for each of the following mathematical expressions.

i) $S^{-1}(13)$

ii) $S(F(15))$

b. [7 points] Write a mathematical expression for each of the following quantities.

i) The average amount of cat food needed per cat in one day if there are c cats in the animal shelter.

Answer: _____

ii) The cost (in **hundreds** of dollars) of z **ounces** of cat food (recall that 1 pound equals 16 ounces).

Answer: _____

iii) The amount of dollars the animal shelter spent on dog **and** cat food on December 17.

Answer: _____